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PRIMARY INTRA-THORACIC MALIGNANCY.*

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This paper is a clinical study, based on eight cases of primary intra-thoracic malignancy, six primary lung cancers and two primary mediastinal tumors observed at the J. T. Nix Clinic from January, 1920, to August 26, 1926. The subject is one of more than academic interest, and I am sure you will agree with me that it is an important one, and one that is not infrequently neglected. This neglect arises perhaps because the diagnosis is not easy, and the treatment unsatisfactory.

Incidence: "The salutary lessons of the dead house," in the words of Osler, have shown us that primary cancer of the lung is not such a rare clinical entity. The roentgen-ray has done the same. Grove and Kramer state that statistics by various authors indicate an incidence of 0.15 per cent of all autopsies, about 1 per cent of all carcinomas. H. G. Wells says that "in large modern hospitals, necropsies show an error in clinical diagnosis in respect to cancer of anywhere from 20 to 50 per cent, depending on how large a proportion of the cases are of malignancy in the internal organs." This will help us to form an idea of how many cases are missed.

The most frequent location for carcinoma anywhere in the body is the stomach, next the uterus, and after this the breast. Carcinoma of the lung is about seventh in order of frequency. Grove and Kramer quote Barron thus: "It has almost been a tradition that carcinoma of the lung is an extremely rare disease, of negligible importance, and that its antemortem diagnosis is practically impossible." To show that this is not so, a few statistics will be referred to.

In an editorial of the Journal of the American Medical Association, February 13, 1926, we learn that the necropsy records of many laboratories show that from 3 to 5 per cent of all cancers arise in the lungs and bronchi, in some places 10 per cent or more. Stahelin in Basel found an increase from 1.76 per cent of lung cancer among all cases of cancer before 1906 to 5 per cent of all cases from 1912 to 1924; Berblinger in Jena, a rise from 2.2 per cent in 1910 to 1914, to 8.3 per cent in 1920 to 1924. In Leipzig the figures have risen to more than 10 per cent in the same period, and in the first half of 1924, 15.5 per cent of all carcinomas were found to be primary in the lung. In Hamburg, before 1895, less than 1 per cent of the cancers seen at the necropsies arose in the lung, but now it is 9.4 per cent. As these figures are based on comparisons extending over a period of years, there can be no doubt as to the absolute increase of primary lung cancer.

*Read before Louisiana State Medical Society, New Orleans, April 26-28, 1927.

†From the J. T. Nix Clinic.

AUTOPSY TABULATIONS SHOWING INCIDENCE OF PRIMARY CANCER OF LUNG

Sailer and Torrey	87,451	130
Hesse	63,088	99
Von Wiczkowski	58,497	126
Wolf	20,116	45
Lavrinovitch	16,407	61
Briese	12,971	60
Fuchs	12,307	8
Weller	11,093	33
Oerstrom	10,272	32
Passler	9,246	16
Reinhardt	8,716	5
Barron	4,362	13
*Rolleston and Trevor	3,983	0
Cook County Hospital	3,659	21
Playfair and Wakeley	3,183	4
Barron	1,003	9
Moise	375	5
Scott and Foreman	302	3

* 3 Primary Sarcomas.

A letter was addressed to the Bureau of the Census and the following insurance companies: Metropolitan Life Insurance Company, Prudential Insurance Company, Equitable Life Assurance Society, Mutual Life Insurance Company of New York, New England Life Insurance Compance, Life Insurance Company of Virginia, and the Pan-American Life Insurance Company, requesting them to furnish us statistics of the ten most common diseases terminating in death during five years—1921 to 1925—also the number of cases of primary cancer and sarcoma of the lung, as well as primary mediastinal tumors, of which they had records.

I wish to acknowledge my thanks for their prompt reply, giving me all their available information. From their figures you will see at a glance the place of cancer and other malignant tumors among the principal causes of death. Unfortunately, with the exception of the Pan-American Life Insurance Company, figures were not available to answer the question as to the number of cases of primary cancer and sarcoma of lungs and primary mediastinal tumors. The following are the figures from the Pan-American Life Insurance Company: No cases in 1921, 1922 and 1925. In 1923, one primary cancer of lung; in 1924, 2 primary cancer of lung and 1 primary malignant mediastinal tumor.

TABLE SHOWING PLACE OF CANCER AND OTHER MALIGNANT TUMORS AMONG THE PRINCIPAL CAUSES OF DEATH

	1921	1922	1923	1924	1925
Bureau of the Census	5	5	5	4	Not completed
Metropolitan Life Insurance Co.	3	4	4	4	3
Prudential Insurance Company	3	3	4	3	3
Equitable Life Assurance Society	2	2	2	2	2
Mutual Life Insurance Company of New York	2	2	2	4	2
New England Life Insurance Co.	3	3	3	3	3
Life Insurance Co. of Virginia	6	6	7	6	6
Pan-American Life Insurance Co.	Not among first ten	7	8	6	4

DEATHS FROM CANCER AND OTHER MALIGNANT TUMORS—BUREAU OF THE CENSUS

1921	1922	1923	1924
76,274	80,938	86,754	91,138

CHARITY HOSPITAL AT NEW ORLEANS

ANNUAL REPORTS.

From 1921 to 1925 there were 105,330 admissions.

Primary Malignant Mediastinal Tumors: Carcinoma, 1; Sarcoma, 2.

Primary Malignancy of Lung: Carcinoma, 3; Sarcoma, 4.

I am indebted to Dr. Leake, Superintendent of the hospital, for allowing me to look over the above reports.

J. T. NIX CLINIC

From January, 1920, to August 26, 1926:

Primary Malignant Mediastinal Tumors: Carcinoma, 1; Sarcoma, 1.

Primary Malignancy of Lung: Carcinoma, 6.

From January, 1924, to August 26, 1926, 3,923 complete examinations were made and six primary intra-thoracic malignancies were recognized.

1920	1921	1922	1923	1924	1925	1926
1	1	0	0	1	1	4

From January, 1924, to August 26, 1926, there were 146 deaths from all causes. Twenty-four of these were from malignancies of all kinds and four from primary intra-thoracic malignancy. Malignancy accounted for 16 per cent of our deaths, and primary intra-thoracic malignancy for 2.7 per cent. One in six of our malignancy deaths was due to primary intra-thoracic malignancy.

Etiology.—We are as yet in the dark as to the cause of the increase in primary intra-thoracic malignancies. Whatever produces chronic inflammatory changes would seem to be contributory. Menetrier says: "There is no primary lung cancer without a previous chronic inflammation." It is but fair to add, however, that Grove and Kramer are of the opinion that "it would seem more probable that acute inflammatory processes rather than chronic irritations play a strong role in enhancing the formation of neoplasms of the lung." The great pandemic of influenza of 1918, the increased inhalation of irritating gases from automobiles, the dust from roads and streets, imperfect fuel combustion, industrial processes, excessve smoking, are probably factors of importance.

Pathology.—As this is a clinical and not a pathological report, only the most meagre data which will enable us intelligently to understand the subject will be mentioned. Malignant mediastinal tumors arise in the tracheo-bronchial glands, the thymus, accessory thyroid, or in one of the tissues of the mediastinum. They may be lymphadenomas, lympho-sarcomas, endotheliomas or epitheliomas. Our case (biopsy) was a lympho-sarcoma.

The primary carcinomas of the lung are grossly classified as—

1. Infiltrating.
2. Multiple nodular.
3. Solitary nodular.
4. Miliary.
5. Mixed.

Histologically, as—

1. Cylindrical cell.
2. Squamous cell.
3. Mixed cell.

The old authorities, such as Perl, Malassez, Boix, Ausprecht, etc., held that true primary cancers of the lung originated in the alveolar epithelium. Most authors now hold that the majority of these tumors arise from the bronchial epithelium. Our cases belonged to the mixed type (nodular and infiltrating). The one on which we had a biopsy was histologically an epidermoid carcinoma.

Metastases from primary cancer of the lung are common and widespread. Adler, in 374 cases, had metastases in all but 33. As none of our cases died in the hospital, so as to allow autopsy studies, we are unable to speak with certainty on this score. By physical examination and roentgen-ray we recognized mediastinal gland involvement in all, pleural in three, costal in one.

Diagnosis.—Ten years ago, in a paper on Pulmonary Syphilis, I wrote, "A professor of medicine, while delivering a lecture on tuberculosis, remarked that an important point in the diagnosis of the disease was always to keep it in mind. And so it is with syphilis of the lungs." This aptly applies to the diagnosis of primary intra-thoracic malignancy. There are no pathognomonic signs nor symptoms nor easy short cuts by which one can arrive at the diagnosis. This is not surprising, because the signs and symptoms of primary intra-thoracic malignancy are found in the more common thoracic diseases.

That many cases are overlooked is very probable. The mistake made in most cases is one of omission rather than commission. The thinking physician realizes full well how common are mistakes in diagnosis. The Father of Medicine has told us that "Experience (is) fallacious and judgment difficult." Cabot finds 50 per cent of clini-

cal diagnoses in error. A. V. Friedrichs, in a study of approximately 1,300 autopsies at the Charity Hospital at New Orleans, says that a correct clinical diagnosis was made in 40 per cent, and a partially correct diagnosis in 50 per cent. As an interne, I remember Professor Duval, the distinguished pathologist, saying at the autopsy table that the clinician is more often wrong than right in his diagnosis. Osler tells us that of 580 cases all sent by physicians to the tuberculosis Dispensary of the Radcliffe Infirmary, 243 were found not to be tubercular!

The clinician must have his suspicions aroused whenever he meets with any condition which causes intra-thoracic pressure. Pains in the chest, dyspnea, hoarseness, aphonia, dysphagia, distention of the veins, cyanosis and edema of face, neck and upper extremities should put him on the lookout for primary intra-thoracic malignancy. Just as the gynecologist always bears in mind malignancy of the uterus, so also should the internist always think of primary intra-thoracic malignancy. It is only after a careful history has been obtained, a thorough examination made, physical, roentgen-ray, laboratory and sometimes observation of the clinical course of the disease, that a correct diagnosis can be made.

Roentgen-ray is a most valuable aid in the recognition of primary intra-thoracic malignancy. At the present time no chest examination can be considered thorough unless our physical examination has been followed by fluoroscopic, and in many cases, skiagraphic studies. Another important point to remember is that whenever we are suspicious of primary pulmonary malignancy we should avail ourselves of the help and skill of the trained bronchoscopist to help us make an early diagnosis, because if the disease is incipient and localized, surgery offers the patient a chance of cure. Every intelligent physician realizes the value and help of laboratory aids, but understands full well that these can never take the place of physical examination and bedside experience; in a word, the art of medicine.

In the differential diagnosis we must consider secondary intra-thoracic malignancy, tuberculosis, syphilis, aneurism, encysted empyema, pericardial effusion, leukemia, Hodgkins' disease, intra-thoracic goitre, enlarged thymus, cardio-renal asthma, hydatid cysts, benign tumors, etc. Secondary intra-thoracic malignancy is usually easily excluded if the patient has a recognizable primary growth elsewhere in the body, or gives a history of having been operated on for malignancy; tuberculosis, by physical examination, roentgen-ray and sputum examination; syphilis, by serological tests and negative sputum examinations; aneurism, by the characteristic physical and roentgen-ray findings; empyema and pericardial effusion, by physical signs and roentgen-ray; leukemia, by the characteristic blood picture; Hodgkins' disease, by tissue examination of a gland if one is involved, or by the roentgen-ray which gives a definite picture; intra-thoracic goitre and enlarged thymus, by the roentgen-ray; cardio-renal asthma, by physical examination; hydatid cyst and benign tumors, by the roentgen-ray. Benign tumors are very rare and of these dermoid cysts are by far the most common, and the finding of hair in the sputum is diagnostic. F. W. Gaarde reports from the Mayo Clinic, 1918-1922, 158 cases with abnormal findings in mediastinum. In this series were found twenty-six lympho-sarcomas, two primary carcinomas and one lipoma.

The diagnosis of primary intra-thoracic malignancy is one which must be made by exclusion, and which is confirmed by a usually characteristic roentgen-ray picture, and by the clinical course of the disease. Thorough methods of examination, confirmed by autopsy findings, have shown us that intra-thoracic malignancy can be recognized intra vitam; our aim must now be to recognize the condition early if we are to cure cases.

McCrae, in 1916, justly remarked: "It is worth noting that what is usually described as primary carcinoma of the lung is really

DIAGNOSTIC TABLE

	W. A. H.	W. P. F.	R. A. H.	J. S.	E. R.	A. L. B.	L. S.	P. C.
Case	1	2	3	4	5	6	7	8
Preliminary Diagnosis	T. B.	Pressure Spinal Roots	Intra-Thor. M.	Bronchitis Spondylitis	Pericardial Effusion Angina	Tracheo-Bronchitis	M. T.	Chronic Bronchitis Spondylitis
X-Ray Diagnosis	Med. T. M. L. L.	M. L. L.	T. B.	M. T. M. L. L.	M. T.	M. T. M. L. L.	M. T.	M. T.
Final Diagnosis	C. L. L.	C. L. L.	C. L.	C. L. L.	C. L.	M. T.	M. T.	C. L. L.

TABLE OF PERSONAL HISTORY DATA

Case	Sex	Race	Age	Occupation	Months Duration of disease	Venereal history	Wass. test	Tobacco	Coffee cups a Day	Tea cups a Day	F. H. of Cancer
1	M	W	43	Electrician	4	—	—	?	?	?	—
2	M	W	43	Farmer	14	+	—	?	?	?	—
3	M	W	56	Restaurateur	10	?	—	Excess	12	2	—
4	M	W	44	Bookbinder	6	?	—	Excess	10	0	M. died Breast cancer
5	M	W	65	Letter Carrier	12	—	—	Excess	5	0	—
6	M	W	43	Electrician	18	+	—	0	0	0	—
7	M	W	45	Collector	?	?	—	Moderate	0	1	—
8	M	W	72	Justice of Peace	?	—	—	Excess	1	1	—

TABLE OF SYMPTOMS

Case	Chest Pains	Cough	Expectoration	Hemoptysis	Alphonia	Cyanosis	Dyspnoea	Gastric Disturbances	Weakness	Loss of Weight	Fever
1	+	+	+	+	—	—	+	+	+	+	+
2	+	+	+	—	—	—	+	—	+	+	+
3	+	+	+	+	—	—	+	+	+	+	+
4	+	+	+	—	—	—	+	—	+	+	+
5	+	+	+	+	+	+	+	+	+	+	+
6	+	+	+	—	+	—	+	+	+	+	+
7	+	—	—	—	—	—	+	—	+	+	—
8	+	+	+	—	—	—	+	+	+	+	+

TABLE OF AGE AND DURATION OF DISEASE IN MONTHS

	W. A. H.	W. P. F.	R. A. H.	J. S.	E. R.	A. L. B.	L. S.	P. C.
Case	1	2	3	4	5	6	7	8
Age	43	43	56	44	60	43	45	72
Duration	4	14	10	6	12	18	?	?

Average age of patient ..... 50 Years
Average duration of disease ..... 9.2 Months

secondary in the lung tissue proper, with the primary growth in a bronchus. This is true in the great majority of cases. The practical point about this is bronchoscopy for a certain early diagnosis with surgical intervention and chance of cure after lobectomy."

CASE REPORTS

Case 1. W. A. H., a white male, aged 43, a native of Louisiana and an electrician by trade, consulted us on December 3, 1920, complaining of a severe chest cold. For the past month he had had a severe cold, associated with a smothering sensation. He had expectorated a little blood.

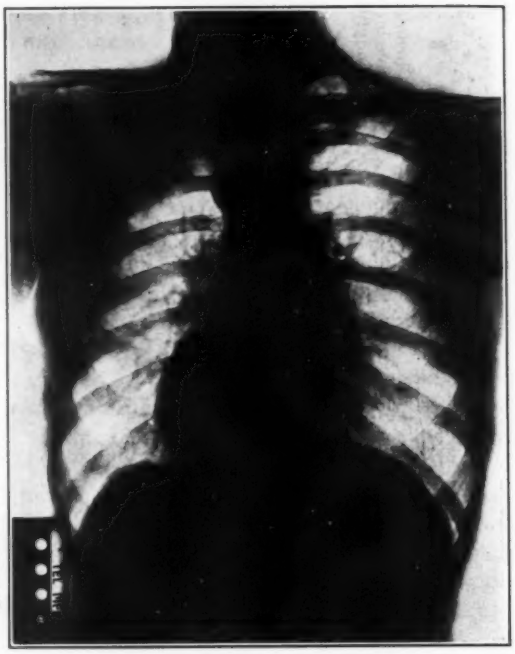
Past History: Except for a susceptibility to respiratory infections he had always enjoyed good health. Six years ago he was operated on for a fistula in ano. This healed in a few days.

The venereal history was negative. He has been married twenty-two years and has six healthy children. His wife has had one stillborn child and one miscarriage. There was no tuberculosis nor cancer in the family.

Physical examination: The general appearance was poor; he was emaciated and dyspneic. Weight: 121 pounds. The skin, mucous membranes and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue and tonsils were negative. The teeth showed advanced pyorrhea alveolaris. Chest: The heart was enlarged to the left. The aortic second sound was accentuated. There was a systolic mitral blow. The blood pressure was systolic 128, diastolic 80. Lungs: There was dullness in the left infra-clavicular space. There was rough breathing scattered in both lungs. Musical and mucous rales were also generally heard. The abdomen and genitals were negative.

Laboratory examinations: The total white count was 10,500, of which 11 per cent were small mononuclears, 3 per cent large mononuclears, and 86 per cent neutrophiles. The Wassermann and Tschurnogobou were negative, and no malaria was found. No tubercle bacilli were found in the sputum. The urine showed no albumin nor sugar; a few hyaline casts and a trace of pus.

Roentgen-ray showed "a huge mediastinal tumor with involvement of practically the entire left lung." (Fortier and Gately). The patient died. Duration of the disease being four months. Preliminary diagnosis: Pulmonary tuberculosis. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Cancer left lung.



Case 2—Increase in density left lung field. 3d and 4th ribs eroded. Epidermoid Carcinoma.

Case 2. W. P. F., a white male, aged 43, a native farmer of Louisiana, consulted us on May 23, 1921, and complained that for the previous six months he had suffered from severe sharp pains in the left shoulder and the left back of the chest, which radiated down the left arm to the back of the elbow. The pains were constant and were increasing in severity. The past history was negative except for a bursectomy twelve years ago. He had had syphilis twenty-five years ago and had received three doses of salvarsan and specific treatment at various times. His wife has one child and had had three miscarriages. There was no tuberculosis nor cancer in the family.

Physical examination: General appearance was fair, though somewhat emaciated. Weight, 120 pounds. The skin, mucous membranes and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue and tonsils were negative. The teeth were false. Blood pressure was systolic 110, diastolic 60. The heart was negative. There was dullness and distant breath sounds at left apex of the lung. The abdomen and genitals were negative.

Laboratory examinations: The total white count was 9,250. The differential count showed 28 per cent small mononuclears, 5 per cent large

mononuclears, and 2 per cent neutrophiles, 65 per cent eosinophiles. The Wassermann and Tschurnogobou were negative. The urine was negative.

Roentgen-ray showed there was an increase in density in the left upper lung field. The third rib posteriorly shows erosion, the fourth rib also. The condition seems to be due to tumor, though tuberculosis and syphilis can not be ruled out. (Fortier and Gately.)

One June 3, 1921, a thoracic decompression was done by Dr. Nix under local anesthesia. The first to fourth ribs were resected and 95 per cent alcohol was injected in the intercostal nerves. Tissue examination was made by Dr. Couret, who reported epidermoid carcinoma.

Result: Died. Duration of disease, 14 months. Preliminary diagnosis: Pressure on spinal nerve root. Roentgen-ray diagnosis: Malignancy left lung. Final diagnosis: Carcinoma left lung.

Case 3. R. A. H., a white male, aged 56, native of Florida, restaurant keeper, consulted us on April 10, 1924, and complained of dyspnea on the slightest exertion, a pressure in the chest over the heart and a sensation as if he could not catch his breath. These symptoms were of three months' duration. He also had a heavy feeling in the epigastrium, a sour stomach, and much gas after eating. His previous health had been good. He drank twelve cupfuls of coffee and two cupfuls of tea a day. Previous to prohibition he took one or two drinks a day. For the past year he had smoked 100 cigarettes a week, before this he had been an inveterate cigarette smoker.

Case 3—Increase in density left mediastinal region with infiltrations in upper part of lung. Trachea displaced to right. Cancer of lungs.

The family history was negative for tuberculosis and cancer.

Physical examination: Showed an emaciated individual whose skin, glands, mucous membranes and reflexes were negative. There was a pterygium of the right eye. The pupils were equal and reacted to light and accommodation. The vision of the right eye was 15/100; of the left eye, 15/40. There were arterio-sclerotic changes in the retina. The tongue was negative. The teeth were bad. There was a chronic granular inflammation of the pharynx. The tonsils were negative. The thyroid was negative. The chest was barrel shaped. The arch of the aorta was dilated. The heart was negative. There was marked peripheral arterio-sclerosis. The blood pressure was systolic, 115; diastolic, 78. There was dullness at the base of the right lung posteriorly. Musical rales were scattered throughout the chest. The abdomen and genitals were negative.

The total white count was 10,000, of which 20 per cent were small mononuclears, 3 per cent large mononuclears, and 77 per cent neutrophiles. The Wassermann was negative. The sputum was negative for tubercle bacilli. The urine showed no albumin nor sugar. P. S. P was 50 per cent, 75 c.c. in two hours.

Roentgen-ray showed "marked increase of density through the entire left lung. The right lung shows irregular areas of increased density. Bilateral tuberculosis. Aorta is enlarged. (Brown)."

On July 22, 1924, the patient returned for examination. His weight was 128 pounds; one year ago it had been 185 pounds. Since his previous examination he had gone to Hot Springs, Arkansas, and had taken thirty-one baths. While there he had developed an attack of appendicitis. He was expectorating freely a black and green blood streaked sputum. Unless he expectorated at once he became nauseated and vomited. Physical examination revealed a very sick man. The lower half of the right lung was dull and the breath sounds were distant.

Roentgen-ray report was as follows: "The stomach and duodenal cap are normal. After twenty-four hours the cecum was practically empty. The appendix was seen imperfectly filled. There was tenderness on palpation in the right iliac region. The colon was irregularly filled. After seventy-two hours the appendix was still imperfectly filled. The distal portion shows multiple diverticuli. Chest: The left apex and left upper lobe show irregular increase of density."

Result: Died. Duration of disease, 10 months.

Roentgen-ray diagnosis: Tuberculosis. Final diagnosis: Cancer of lungs.

Case 4. J. S., a white male, aged 44, a native of Pennsylvania, bookbinder by trade, consulted us on January 4, 1926, and complained of pains across the lower part of the back of the left side of the chest. These pains began gradually three months ago and were noticed on getting up in the morning and would be less during the day. Two months ago the patient developed a chest cold and since then he had been getting worse. Three weeks ago he had to stop work.

Case 4—Extremely dense mass in inner 2/3 of left chest overlying and obscuring heart and aorta outlines. Some lung markings in outer 1/3 of lung field. Markings on right appear tuberculous. Right side of heart not displaced. Cancer left lung.

He had had malaria in 1895 and ptomain poisoning in 1925. He drinks very little alcohol, ten to twelve cupfuls of coffee a day. He smokes forty cigarettes a day. His mother died of cancer of the breast. There was no tuberculosis in the family.

Physical examination: The general appearance was poor. His weight was 150 pounds, temperature was 100.6. There was pallor of the skin. The lymph glands and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue had a brown coat, the pharynx was injected. The teeth were in poor condition. The right middle turbinate was engorged and hypertrophied. There was slight scoliosis of the lower dorsal spine, the spine being held rigid when the patient attempts to bend forward; other motions of the spine were normal. The sacro-iliac points were sensitive. The left side of the chest was smaller than the right. The heart was negative. The blood pressure was systolic, 130; diastolic, 80. Over the right lung there were scattered high pitched breath sounds and numerous mucous and musical rales; on the left there was dullness throughout, more so at base, where there were diminished tactile fremitus and breath sounds. There were musical rales at the left apex and fine moist rales at the base. The abdomen and genitals were negative. The total white count was 5,000; differential: small mononuclears, 20 per cent; large mononuclears, 2 per cent; neutrophiles, 78 per cent; Wassermann negative. Urine negative. P. S. P. 40 per cent. 100 c.c. in two hours.

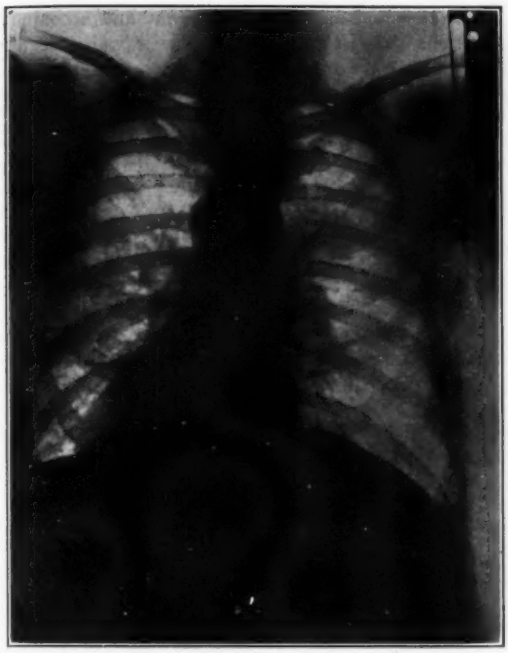
Roentgen-ray showed "a general increase of density over left lung, with loss of diaphragm outline. Right lung shows irregular increases of density and areas of calcification. Tuberculosis with left pleural effusion."

On January 9, 1926, three and a half pints of sero-sanguinous fluid were removed from the left pleural cavity.

Roentgen-ray: January 11, 1926. "An extremely dense mass is seen in the inner two-thirds of the left chest overlying and obscuring the left heart and aorta outlines. Some lung markings seen in the outer third of the lung field. There are in right lung markings which appear tuberculous. The right side of the heart is not displaced. Evidence of mediastinal tumor."

Result: Died. Duration of disease: Six months.

Preliminary diagnosis: Spondylitis, bronchitis. Roentgen-ray diagnosis: Tuberculosis, mediastinal tumor. Final diagnosis: Cancer left lung.



Case 5a—Increase in density right mediastinal region with infiltrations in right lung. Arch of aorta somewhat knobbed. Cancer of lungs.

Case 5. E. R., a white male, 60 years of age, a native of Louisiana, letter carrier, consulted us on February 23, 1926, and complained of shortness of breath for the past twelve months. He became shortwinded on the slightest exertion and had pains under the lower part of the sternum. Sometimes on his route he had to stop, sit down and catch hold of something, and suffered from the sensation of being unable to get his breath. This passed off in a few seconds and he continued his work. For the past six months he had had a severe, usually non-productive cough. The sputum was blood streaked. He had lost twenty-two pounds during the past year. Half an hour after eating he had epigastric pains so that his diet was limited to milk and eggs. He had had rheumatism and dysentery in boyhood. Twenty years ago he had had an attack of jaundice for six weeks. Fifteen years ago he had had typhoid fever, complicated by broncho-pneumonia. One year later he suffered from bronchitis and since then, at various times, he had noticed attacks of dyspnea. Up to three months ago he drank five or six cupfuls of coffee and smoked sixty cigarettes a day. The venereal history was negative. Family history showed no tuberculosis nor cancer.

Physical examination: The weight was 174 pounds. The temperature was 99.4. The skin and glands were negative. The kneejerks were sluggish. The pupils were equal and reacted to light and accommodation. There was marked arcus senilis and xanthomata were present. The vision of the right eye was 15/40, of the left eye, 15/70. The discs were clear, the arteries small, and the veins large. The tongue, teeth and tonsils were negative. The uvula was thickened. The vocal cords were thickened. There was polypoid degeneration of the right middle turbinate. The apex beat was not visible. The heart sounds were distant. There was marked peripheral arterio-sclerosis. The blood pressure was systolic, 100; diastolic, 70. There was harsh breathing over the whole right back of the chest, with all sorts of musical rales throughout. The abdomen was large and flaccid, with epigastric soreness. The liver was sensitive, but not enlarged. The genitals were negative. The total white count was 10,000, differential: small mononuclears, 18 per cent; large mononuclears, 7 per cent; neutrophiles, 75 per cent. Sputum: No tubercle bacilli found. Urine shows much pus. P. S. P.: 30 per cent, 100 c. c. in two hours.

Roentgen-ray: Chest: Two areas of density somewhat rounded in outline are situated in region of mediastinum. Irregular increases of density radiating from these areas especially in upper part of lung. Mediastinal tumor. Gastro-

Case 5b—Shows extension of process in right lung. Mediastinal tumor.

Case 6—Marked increase of right hilus shadow and general increase of density in right lung. Lympho-Sarcoma.

intestinal tract: The stomach and duodenal cap are normal. Twenty-four hour examination: The cecum is filled and somewhat tender. The ascending colon is filled. The appendix is visible, irregularly filled and curved upward.

Result: Died. Duration of disease, one year.

Preliminary diagnosis: Angina, pericardial effusion. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Cancer of lungs.

Case 6. A. L. B., a white male, 43 years, native of Louisiana, electrician by trade, consulted us on June 20, 1925, and complained of a cough of a year's duration. He did not feel badly. There was hardly any expectoration, but the patient coughed so much after meals that he almost vomited. He had had mumps, typhoid fever and malaria in childhood. He had had influenza twice. He had been treated for urethritis and syphilis. He did not drink coffee nor alcohol, and tea but seldom. He did not use tobacco. One uncle had tuberculosis; no cancer in the family.

Physical examination: The general appearance was fair. His weight was 181 pounds, the temperature was 99.2. The musculature was flabby. The skin showed dilated capillaries on the face and lower part of the chest anteriorly. The glands and reflexes were negative. The pupils were equal and reacted to light and accommodation. The tongue and tonsils were negative. There were many teeth missing and the remaining ones were in bad condition. The heart was negative. The blood pressure was: systolic, 118; diastolic, 80. There were peculiar breath sounds over the chest as if there was some laryngeal obstruction. There were no rales. The abdomen and genitals were negative.

Laboratory examinations: Blood: The total white count was 4,500; differential: small mononuclears, 25 per cent; large mononuclears, 5 per cent; neutrophiles, 70 per cent. Urine: Negative. P. S. P.: 35 per cent, 150 c. c. in two hours.

Roentgen-ray showed: "Marked increase of right hilus shadow and a general increase of density over the right lung. Mediastinal tumor."

On October 22, the patient was re-examined. He stated that four months ago he accidentally noticed a small mass on the left side of the neck above the collar bone. He said that this mass was painless and was growing slowly. He had lost twenty-four pounds, his appetite was good, but his digestion was poor. Under ethylene anesthesia Dr. Nix removed a section from the tumor mass for diagnosis, and Dr. Couret reported lympho-sarcoma with marked degeneration of many of the tumor cells.

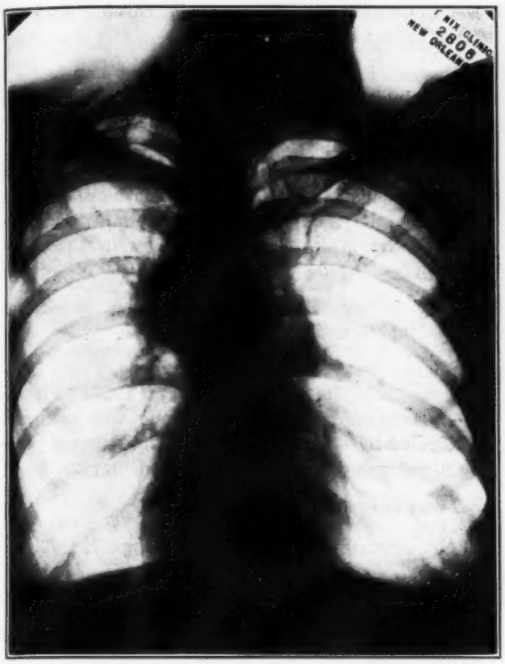
Result: Died. Duration of disease, one and one-half years.

Preliminary diagnosis: Tracheo-bronchitis. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Lymphosarcoma of mediastinum.

Case 7. S. S., a white male, aged 45, native of New York, a collector, consulted us on April 4, 1926, and complained of pains in left side of front of chest and left arm for the past four months. These pains began over the heart and radiated to the left shoulder and down the left arm. He suffered very little during the day, but very much at night. It felt as if the muscles of the arm were being torn apart. Six years ago he had had paralysis of the left side of his face. One and a half years ago he had had a carbuncle on the back of the left knee. One year ago he had pneumonia.

He had had a right inguinal herniotomy twelve years ago and an excision of a carbuncle one and a half years ago. He drank no coffee and one cupful of tea a day. He smoked twenty cigarettes a day. No tuberculosis nor cancer in the family.

Physical examination: General appearance was bad. He was poorly developed and nourished,



Case 7—Shadow in left mediastinal region. Trachea displaced to right. Mediastinal tumor.

weighing 101 pounds. The skin, glands and reflexes were negative. There was a left facial paralysis. The fingers were clubbed. The vision of the right eye was 15/200, of the left eye 15/200. The discs were clear, the veins of the fundus large. There was arterio-sclerosis. The pupils were equal and reacted to light and accommodation. The patient was round shouldered. The thyroid was negative. The nasal septum was deflected, crusts in the left nares There was fetor oris. The tongue was negative. The tonsils were enlarged. The heart was negative. There was well marked peripheral arterio-sclerosis. The blood pressure was systolic, 118; diastolic, 80. Diminished breath sounds were noted at right base posteriorly. There were old infiltrations in both lungs. The abdomen showed a right inguinal scar. The genitals are negative. Blood: The total white count was 7,500; differential: Small mononuclears, 28 per cent; large mononuclears, 10 per cent; neutrophiles, 62 per cent. Wassermann: Negative. Urine: Negative. P. S. P., 50 per cent, 175 c. c. in two hours.

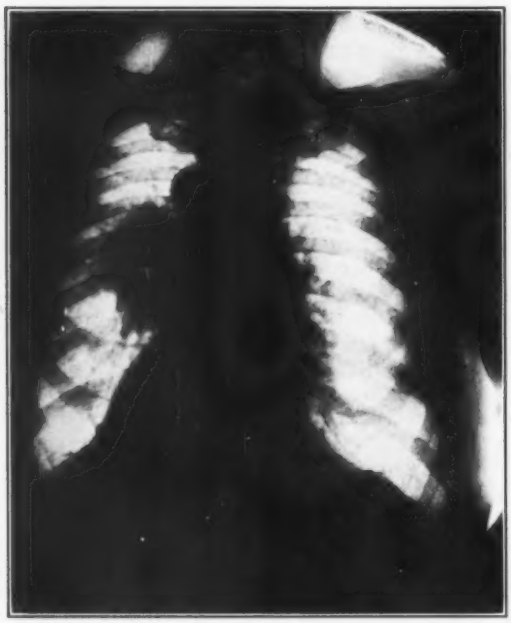
Roentgen-ray report was as follows: "Shadow in upper mediastinal region. The trachea is displaced to the right (Fortier). The left shoulder is negative. Gastro-intestinal: The stomach is ptosed. The duodenal cap is normal. Twenty-four hour examination: The cecum is irregularly filled, not tender. The colon is spastic in transverse portion. The appendix is not seen."

Result: Unknown. Duration of disease unknown (patient no longer under our care).

Preliminary diagnosis: Mediastinal tumor; angina. Roentgen-ray diagnosis: Mediastinal tumor. Final diagnosis: Mediastinal tumor.

Case 8. P. C., a white male, 72 years, a native of Louisiana, justice of the peace by occupation, consulted us on August 26, 1926, and complained of pains in the back, shortness of breath and indigestion. For a year he had had pains along both sides of the spine, which began below the shoulder blades and radiated down the lower back and down the thighs to the knees. The patient, while in bed, had constantly to change his position to get some relief, and finally had to get up. After he had been up and about he suffered but little during the day. For the past year he had also been shortwinded, more particularly after his noon meal, when he felt bloated and drowsy. After lying down for a few minutes he felt better. When he walked a little his thighs got numb and felt dead, as if the circulation had stopped. He had yellow fever in 1878 and malaria fever in 1905. There was a history of urethritis when a young man, but no sores. He drank one cup of coffee, one cup of tea and one bottle of home brew a day. Up to a year ago he smoked forty to sixty cigarettes a day. No history of familial tuberculosis nor cancer.

Physical examination: General appearance was fair. The mentality, development and nutrition were normal. The weight was 166 pounds, the temperature was 98.4. The skin, glands and reflexes were negative. The pupils were equal and reacted to light and accommodation. Arcus senilis was present. There was a small epithelioma at the inner canthus of the left eye. The vision of the right eye was 15/50, with glasses, 15/40; and of the left eye, 15/70, with glasses 15/30. There were pigment deposits in the retina above the disc. The veins were large, the arteries small. Retinal arterio-sclerosis, old chorio-retinitis. The ear, nose and throat examination was normal (Meyer). The tongue was negative. The uvula was enlarged. The teeth were false. The heart showed an accentuated aortic second sound. The blood pressure was systolic, 144; diastolic, 88. The peripheral arteries showed moderate arterio-sclerotic changes. Throughout both lungs were scattered sonorous and sibilant rales. The abdomen and genitals were negative. The rectum and prostate, by digital examination, were negative. The total white count, 5,250, differential: small mononuclears, 30; neutrophiles, 70.



Case 8—Large shadow in lung near left mediastinal region. Aorta knoblike at arch and has a sclerotic patch. Heart enlarged to left. Cancer left lung.

Wassermann: Negative. Sputum: No tubercle bacilli found. Urine: Negative. P. S. P. 40 per cent, 75 c.c. in two hours ten minutes.

Roentgen-ray, August 26, 1926, was as follows: Chest: "Heart somewhat enlarged. General enlargement of aorta. No fluoroscopic evidence of lung pathology. Gastro-intestinal tract: Stomach, normal. Duodenal cap, normal. Twenty-four hour examination: Cecum filled, not tender. Colon spastic in transverse portion. Appendix seen filled irregularly in distal portion. Sacro-iliac joints normal. Conclusion: Chronic appendicitis (Brown)."

Roentgen-ray: December 7, 1926: "There is a shadow in left lung. Aorta knob-like at arch and shows a sclerotic patch. Heart enlarged to left. Conclusion: Mediastinal tumor probably malignant with infiltrations in lungs (Fortier and Brown)." (To Dr. Brown is due the credit of having made the diagnosis. At the first examination on August 26, 1926, there was no fluoroscopic evidence of lung pathology, but on December 7, 1926, by fluoroscopy she noticed a lung shadow which was confirmed by the roentgen-ray plate). Gastro-intestinal tract: Stomach and duodenal cap, normal. Twenty-four hour examination: No tenderness in region of cecum which was filled. Colon, normal. Appendix, not seen. Conclusion: Evidence of chronic appendicitis."

Result: February 28, 1927, patient had lost fifteen pounds during the past six months. He complained of constant pains below the lower angle of the left scapula. He said that he coughed and expectorated but little and that he had less dyspnea. On physical examination there was more dullness on percussion and all sorts of sibilant, sonorous and musical rales. The pathology in the lungs was progressing.

Preliminary diagnosis: Chronic bronchitis, hypertrophic arthritis of spine.

Roentgen-ray diagnosis: August 26, 1926: Fluoroscopy negative. December 7, 1926: Fluoroscopy. A shadow in the left lung was seen and confirmed by skiagraph. Mediastinal tumor probably malignant with infiltrations in lungs.

Final diagnosis: Cancer of lungs.

Prognosis.—Up to the present time it is hopeless in the vast majority of cases. The disease is latent in the beginning, usually inaccessible, and the patient generally seeks relief when it is too late to cure him. From a practical point of view, the earlier the disease the harder it is to make the diagnosis. Samuel Robinson says that "the removal of an early localized malignant tumor of the lung is surgically possible and that an exploratory thoracotomy should be a safe performance." However, with very early diagnosis, operative bronchoscopy and refinements in thoracic surgery the prospects for future success appear brighter.

Treatment.—Medical treatment can aim only to relieve pain and to prolong the course of the disease, there is nothing curative about it. Deep roentgen-ray therapy causes striking temporary improvement.

If the disease is recognized early and is localized in a bronchus it can be cured by operative measures through the bronchoscope, similarly to a malignancy of the bladder treated through the cystoscope. Like cancer in any other part of the body, the problem is almost entirely a surgical one. I say almost entirely because we know that radium and deep roentgen-ray therapy can cure accessible and localized malignancies. Perhaps in the near future a chemi-

cal or serological agent will be discovered, which can be introduced into the circulation and which will possess a selective and destructive action on the malignant cells and spare the normal ones and so cure our cases—"A consummation devoutly to be wished for."

Summary.—Primary intra-thoracic malignancy is not such a rare condition as is generally supposed, it is often overlooked, but should be entertained in the differential diagnosis of cases presenting obscure intra-thoracic signs. It can be diagnosed by thorough examination. The roentgen-ray in most cases, and bronchoscopy in some cases, are valuable diagnostic aids. The cause of the increase in primary lung cancer is unknown. Although fully realizing that our series of cases is too small to draw any general conclusions, we have been struck by the excessive smoking of many of the patients, and that all the cases occurred in males. The early diagnosis of this condition and the help of the bronchoscopist and the assistance of the thoracic surgeon will undoubtedly improve the outlook for cure in the future.

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DISCUSSION.

Dr. Randolph Lyons (New Orleans): I think that Dr. Perret is to be congratulated on the demonstration that he has given us of these intrathoracic growths. We have all had the fortune, or, I should say, misfortune, of coming in contact with a certain number of growths in the chest. There is first the difficulty in making a differential diagnosis. The roentgen-ray has probably been of the greatest help to us. I think in a great many instances, without the assistance of the roentgen-ray, we would have a very difficult time in differentiating some of these growths. The condition which has caused me the greatest trouble in differentiating is that of tuberculosis. I say that first, and then secondly, in mediastinum growths, aneurysm from tumor. In other words, the most frequent error in diagnosis of these cases is tuberculosis, particularly where the growth is in the lung proper, primarily, and in the other cases where it is mediastinal, the differentiation from aneurysm.

The mediastinal growths are almost always sarcomata, and the ones that I have seen fairly early had produced very few symptoms. Among the first symptoms, or signs I should say rather, has been that of dullness underneath the sternum.

I remember a number of years ago most of us in the college were interested in aneurysms and we used to teach the students very careful percussion of the upper sternum and particularly to the right and to the left of it, and whenever we would get a dullness extending beyond the sternum, either to the left or to the right, we would immediately suspect an aneurysm and occasionally we would find instead of it being due to aneurysm it was due to a tumor. In this type of growth hemoptysis is usually late, and the symptoms and signs are not very marked until the growth begins to encroach into the lung proper. Then we begin to get pressure symptoms depending upon the position in the mediastinum, whether the anterior or posterior mediastinum is involved.

In the lung tumors, as Dr. Perret showed us, the symptoms of expectoration, fever, possibly a little pain at first, are quite early. In the last two cases I have seen of lung tumor proper, carcinoma originating in the bronchi, hemorrhage was a very early and persistent symptom and frequently these cases were, in the beginning, mistaken, and I mistook one myself, for tuberculosis until repeatedly negative sputums in a case of apparent advanced disease made me very suspicious that we were dealing with something else.

The presence of glands, as Dr. Perret mentioned, above the clavicle and in the other regions, of course, makes us suspicious of a malignant growth and the presence of such a gland may determine the diagnosis. I am very glad Dr. Perret brought this subject up, because I think it is one that can be very profitably discussed.

Dr. A. A. Herold (Shreveport): This is a very important paper because this condition is so often overlooked even with our modern methods of diagnosis. I have in mind right now two cases in which I am not sure, in spite of our use of the roentgen-ray and laboratory facilities, whether or not they were tumors. One was a case of a colored boy who consulted me about having a sputum colored with a little blood, and on physical examination I was shocked at the extent of the lesion in his lung, especially in view of the fact that he said he had lost no weight. So far as he knew he had no fever; he felt well, but he was just a little bit alarmed about having spat some blood.

On the strength of his physical examination I had him have an roentgenogram made and it showed an extensive lesion of his right lung, involving the whole middle and some of the lower. The sputum was positive for tuberculosis. This boy later informed me that in spite of my request he was going West. I warned him that if he went West he should take the same care as if he went East, but he went. He got to feeling worse and came home, had a hemorrhage and died. I didn't see him when he returned and I don't know the details, but I strongly suspect that in addition to tuberculosis that boy had a lung tumor.

Another case was that of a gentleman of fifty with hypotension, loss of weight, and arteriosclerosis. We strongly suspected luetic infection. I understood him to give a negative history and his Wassermann was negative. We had a roentgenogram made of his chest and it showed what the radiologist diagnosed as a lung tumor, probably malignant, not very big, but at the hilus. We gave him deep roentgen-ray therapy and I accidentally learned there was a history of lues. On second questioning he admitted it and I gave him specific treatment. He has improved under the combined treatment with the deep roentgen-ray therapy and the specific treatment, but whether he has a malignancy of the lung I don't know.

I just mention these two cases to show that even with modern facilities it is difficult to make diagnosis in some cases of suspected tumor of the chest.

Dr. Wallace Durel (New Orleans): This question of primary neoplastic growth in the lungs is certainly becoming more and more interesting, more so in the last few months, since one of my dear confreres, a schoolmate of mine, came to me and said: "Well, Wallace, I believe I have what brother had," thinking of incipient tuberculosis. He had spat blood and had been spitting blood for two weeks, had a temperature of 100 and a deep persistent pain. I examined the lung and said: "Charlie, that is absurd. Your lungs are clear, my boy; absolutely free." I gave him a tubercular test and it was negative, a subcutaneous test. I had a roentgen-ray examination made and that is, gentlemen, the main part in your diagnosis—the roentgen-ray skiagraph. That will no doubt determine in the majority of cases the diagnosis.

The round appearance of your lesion, which you do not find in the incipient tuberculosis—I am not talking of late cases of cancer, I am talking now of incipient cases of cancer—is next in importance besides the spitting of blood, and by the way it may not be pure blood. Two cases that I had recently had the real prune-juice sputum. One was in the ward at the hospital, the tuberculosis ward, and with the spitting of cancer patients in the tuberculosis ward the theory is no doubt exploded today that cancer and tuberculosis will not exist in the same individual. That is admitted. Just recently I have seen two cases of very active tuberculosis, with primary carcinoma of the lung. So then the question of carcinoma existing in the tuberculous patient is not so.

In the question of diagnosis, no doubt but the deep pain mentioned by the doctor, a persistent pain, more so at night, a dyspnea, is important. Dr. Coffray, secretary to the office, had a pronounced dyspnea, and yet there was nothing in the circulatory system, nothing in the pulmonary system that could account for the dyspnea. Effusion, and those are the cases that lead us more to err. If the cancer neoplastic growth is in the middle area of the lung or in the apex, where we are not so liable to mistake it, we do not err so often, but when it is, as it was in this confrere of mine, that the neoplastic growth is at the base, I don't know. We were several days consulting in the case, and one of us made the diagnosis of abscess of the lung, and another made the diagnosis of encysted empyema, and another made a diagnosis of unresolved grippe. Now, of course, it took a very short time. This boy died within eight weeks. When the secondary diseases developed, it became a clear case of carcinoma.

The other cases in mind went to autopsy. There is one case, however, that I would like to relate. It puzzled me and has been the cause of quite a bit of criticism. This lady was sent to me and it was diagnosed as tuberculosis. She had bacilli in the sputum and she came to my sanitorium. She was running a temperature of 99.2, but she had a pulse of 100 to 120. The lesions were on the left side and whenever you find neoplastic growth on the left side and a rapid pulse, be on the lookout because you are most likely to have not only a primary carcinoma, but also a mediastinal tumor. That was the peculiar condition in this case. She had bilateral effusion within two months, thinking it was a tuberculous case, the effusion on both sides absorbed, but remained just as near, the deep pain persisting at night and the hemoptysis, this prune-juice sputum. Roentgen-ray showed absolutely well defined neoplastic growths.

So then, in conclusion, when I look back over the last twenty-five years, there were many certificates that I signed pulmonary tuberculosis that I know I should have signed primary carcinoma of the lungs.

Dr. Vaughn (New Orleans): I had no idea of discussing this paper, but I happened to see out here at this roentgen-ray display two pictures of a mediastinal tumor taken at our laboratory at Monroe. It is such a good one that I hope you will be able to see it. I will show it to you in a minute. This case previously was diagnosed as a case of tuberculosis because of hemoptysis. He had been previously treated, and very likely justly so, for malaria, accompanied by temperature, which he likely had. This is a gentleman in his sixth decade who had been condemned and put off to himself to die as a tuberculous individual and the roentgen-ray showed a very distinctive mediastinal tumor. (Dr. Vaughn showed the negative.) This is a very good picture.

Another thing I want to bring out that I have not heard discussed. This patient also has a four plus Wassermann. In looking over the literature I find that the Wassermann plus happens as a rule in fifty per cent of the cases; that is, the literature through which we were able to look. The mere fact of this showing a four plus caused us to decide the best thing to do was to give this individual some intensive mixed treatment. His tumor at this particular time doesn't show any decrease in size, but a considerable improvement in the general appearance of the patient can be seen. He says he is a farmer by profession, and were it not for the fact that he is afraid of the hemoptysis he would return to work this spring.

Dr. Perret (closing): I think that an important fact about the primary intrathoracic malignan-

cies is to bear in mind that they are more frequent than we usually realize. After we have studied the cases thoroughly it is a very good idea to give the patients the benefit of specific treatment just as we do when we have a tumor of the brain or of the liver. Our patients had the benefit of such treatment, but did not respond.

We now know that many cases of primary pulmonary malignancy begin in the bronchial tubes and we now utilize the bronchoscope for diagnosis and treatment, and so we may hope to increase the number of our early diagnoses and offer the hope of some cures.

DENTAL CYSTS.*

CHAS. A. McWILLIAMS, M. D.,

GULFPORT, MISS.

As rhinologists, we are frequently consulted about some dental pathological process which is causing nasal symptoms. Dental cysts, while not common, are met with frequently enough to justify their study. It is necessary that the closest co-operation between the dentist and rhinologist be maintained.

The classification of dental cysts as given by Mallory, is according to origin. The root cysts springing from epithelial cell rest in the peri-dental membrane. They may spring from granulomas at the root ends of devitalized teeth or teeth containing dead pulp, the center of the granuloma breaking down and becoming liquified and the cavity in the bone occupied being lined by epithelium laid down in a fibrous tissue. Sometimes a para-dental or peri-apical cyst is formed by the epithelial mass breaking down by fatty degeneration. The fatty degeneration may become a caseous mass with a very foul odor or a pus cavity may be formed. These are sometimes called radicular cysts. They are very often seen in edentulous mouths.

The sequence of events in a root cyst is then (1) irritation from a devitalized tooth or dead pulp, (2) granulomatous liquefaction of the center and the formation of a cyst.

The cysts usually grow in the direction of least resistance. The cyst fluid is usually straw colored or it may be gelatinous. These cysts develop slowly so they produce no symptoms unless they become infected. They are usually discovered by roentgen-ray examination. Later the symptoms that may arise will depend upon the structures involved.

Small radicular or root cysts very often develop from granuloma in the floor of the maxillary sinuses. These cases give a vague history of pain in the region where the teeth were extracted. There is an increased nasal secretion which drops in the throat. The patient is usually very nervous and undernourished. There has been some temporary improvement in the patient's general health, after removal of the teeth. Roentgen-ray examination shows very little except thickened membrane in the floor of the maxillary sinuses, especially if lipiodol is injected.

Irrigation is negative the first time except for a few flakes and some odor. These flakes will be overlooked unless a black bottom pan is used. Another irrigation in a day or two will reveal some muco-purulent discharge. One small gray ball of mucus irrigated from the maxillary sinuses is enough to make a diagnosis of a follicular or radicular cyst if one or more molars have been extracted or if any pulpless teeth are present under the antrum. These cases are greatly benefitted by destroying the cyst, a radical antrum operation being required.

Operation by the Caldwell-Luc or Denker methods reveals a normal or thickened membrane lining the maxillary sinus, except along the floor over the roots of the teeth. Small cysts filled with a thin dis-

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*Read before the Mississippi State Medical Association, Jackson, Miss., May 10-12, 1927.

*The reading of this paper was followed by the showing of slides giving pictures of cysts and illustrating the use of the Cannula.

charge or caseous material with a foul odor are present there.

A dentigerous cyst is one that contains, or is associated with, impacted or supernumerary teeth. The term is sometimes used to designate cysts arising under normally developed teeth.

Cysts may form as a result of an inflammatory process extending from the root of a tooth which penetrated to the antrum and is covered only by the mucous membrane. Cysts must be differentiated from empyema and growths, more frequently some type of sarcoma and carcinoma.

In regard to the relationship to surrounding tissues, nerve trunks and blood vessels are not destroyed but are gradually pushed to one side until they occupy abnormal positions. The antrum is in some cases practically eliminated by the cyst pressing the antrum floor up almost to the orbital plate. The true antrum remains much reduced in size but not involved.

Evelyn S., aged 13, was referred by Dr. Hopkins. She had a foul discharge from a tooth socket following extraction of the first upper left temporary molar. There had been no pain before or after the extraction. On account of the cavity extending 4 cm. upward it was thought to open into the antrum. Roentgen ray examination revealed an impacted first bicuspid, which was removed. The discharge continued. Roentgen ray examination of the sinuses showed the left maxillary sinus region very cloudy, but irrigation with King's middle meatus cannula showed it to be normal. Lipiodol was injected into the antrum and outlined the displaced maxillary sinus showing the lining to be thin and smooth. Lipiodol was packed in the cyst but on account of its thick walls and polypoid tissue its true size was not shown. It extended almost to the orbit. With a local anesthetic a regular Caldwell-Luc was done. The normal maxillary sinus was not opened and a naso-antral opening was made through which the cavity has been irrigated at frequent intervals. The large cavity has almost closed by granulations but the tooth socket is still open which will probably require a plastic operation to close.

These large dentigerous cysts may rupture into the maxillary sinuses and cause its living membrane to become infected. If the case reported above had been irrigated by using a Douglas trocar under the inferior turbinate the cyst would have been irrigated and possibly mistaken for a diseased maxillary sinus.

Another type of cyst found in the mouth is a retention cyst and is sometimes spoken of as a ranula. These are found on the floor of the oral cavity in either side of the midline. It has been thought by some that these cysts are caused by an obstruction of Wharton's duct. However, in practically every case of ranula this duct has been found open and free. If this duct were obstructed there would be inflammatory symptoms that do not occur in the presence of ranula. In fact the ranula develops similarly to other cysts about the body without untoward symptoms until some important structures are pressed upon. A ranula is usually unilateral. It is a chronic swelling that develops very slowly without pain in the anterior portion of the floor of the mouth. It is bluish gray and is often covered with veins which seem to be lying close to the surface.

Another class of cysts are the multi-locular or adamantinomas. Their location is usually at the angle of the mandible. The treatment is essentially the same as the treatment for cysts in any other part of the body; that is, enucleation of the cystic membrane with its contents.

The presence of a dental cyst should be kept in mind when looking for a focus of infection especially in edentulous mouths. Unless roentgen ray examinations are made these cases will be overlooked.

DISCUSSION.

Dr. George E. Adkins (Jackson): I want to compliment Dr. McWilliams on the very admirable way in which this paper was presented. I shall take up a few points that might come up in a roentgen-ray examination. I think I can really bring out more by that than I could by discussing the paper. These things may not all be cysts that we roentgen-ray and find, and the few little rules we have to go by will decide what we have.

In the first place, all tumors that you find with the roentgen-ray in the jaw would be either bone-forming or bone-destroying, with the exception of cysts and odontomas. That would be a good point in making a diagnosis of the cysts. It is neither bone-destroying nor bone-forming. There are four points that I usually try to bear in mind when I am trying to decide on a roentgen-ray picture of a bone tumor. 1. Its point of origin. Does it originate at the place you find it, or is it a metastasis from a lesion elsewhere, or does it invade the jaw from surrounding structures. 2. The presence or absence of bone production. 3. Is the cortex expanded, thinned out or broken through. 4. Does the new growth invade the adjacent structures. If it simply expands the cortex you might call it a cyst, but if it does one of the other three things mentioned it is very likely not a cyst. Tumors that originate in the jaw would be cysts, odontoma, osteoma, sarcoma, etc.

Tumors that are metastatic are, among others, carcinoma, sarcoma (the melanotic type), hypernephroma and hemiangioma.

Tumors that have their origin in the soft tissue and spread to the jaw are probably carcinomatous.

Tumors that produce bone are osteomata or exostoses.

Tumors that destroy or expand bone are cysts, carcinoma, sarcoma, hypernephroma.

The dental root cyst, epithelial in origin springing from granulomas is more common in the upper incisor and bicuspid region and is seen in the radiogram as a well defined circumscribed mass with no new bone about it. It absorbs the bone by expansion and thins out the cortex. This type of cyst may occur at any age. The dentigerous or follicular cyst usually occurs in the lower jaw near the angle. They usually contain fluid and dental elements. They are really overgrown dental follicles and usually occur in young adults. I noticed that the doctor reported a cyst of the first molar and said that on extracting the last bicuspid it was lost in the cavity. I was just wondering if this would not conform a little more to the rule and really be in the bicuspid region. However, I do not question the accuracy of the docor's report for these cysts are occasionally reported in unusual fields.

Dr. E. H. Jones (Vicksburg): Dr. McWilliams told me about this cannula last February and I have used it very satisfactorily since then. I had one unfortunate case, where due to an anomaly it got into the orbit instead of the antrum. I use them more for children's cases. You can just slip in the ear and syringe and wash it out as clean as can be.

Dr. B. S. Guyton (Oxford): I would like to mention one little thing. Two years ago at the Academy meeting in Chicago, two or three men mentioned the fact that they had had sudden deaths from washing the antrum. I wish to know if any one in this audience ever had anything like that. One man reported two or three cases, deaths he had in his office. I think they claimed that all those cases were cases in which they shot air through the antrum before putting the water through, and they emphasized the point that it is an extremely dangerous procedure. I certainly have enjoyed Dr. McWilliams' paper. It has been instructive to me.

Dr. D. H. Anthony (Memphis, Tenn.): You will pardon me for varying from the doctor's paper to state that the sudden deaths I have heard of were where they used air before they did water. I have never figured out how it occurred. A short time ago I did a radical operation on the antrum and was taking off the nasal wall of the antrum and was about half way back when I wounded a very large artery—it undoubtedly was the descending palatine artery which should have entered the antrum on the posterior wall. He had so severe a hemorrhage that the interne asked me laughingly "Which one of the carotids did you cut that time?" I blocked it with bone wax mixed with cotton. Ten days after the operation everything was all right and the patient was comfortable, when suddenly a hemorrhage began about the middle of the night. The interne had packed the nose well, and I removed it and repacked it. It was bleeding copiously and it continued to bleed, and in thirty minutes after I packed it, I was forced to take the patient to the operating room to stop the bleeding by ligating the external carotid artery. In another case, while irrigating an antrum in my office, I got a little blood, but when I removed my needle the patient had a severe hemorrhage from the nose—it was not just soiling a towel, it was a severe hemorrhage—the point is, that having had these experiences, I believe these sudden deaths are due to needle puncture into the large artery or vein and getting air in them, causing sudden death.

Dr. E. Leroy Wilkins (Clarksdale): I enjoyed Dr. McWilliams' paper very much. It brings out some new thoughts. I do not know much about cysts, but he did mention cysts in the mouth and sub-maxillary duct. It so happens that Dr. Guyton and I saw a case several years ago where a cyst or blocking off of the sub-maxillary duct caused a good deal of swelling. A child about five years old had an enormous swelling of gland under the jaw and some showing in the mouth.

It was Dr. Guyton's patient, and he was brought to me to do what Guyton had been doing to keep it from swelling. When the child opened his mouth he elevated the tongue and I saw a white mass appear and then go back like a mouse into its hole, and I thought it must be pus, so I tried to massage it forward and again it appeared. but it was too large to massage it out of the mouth of the duct, so I made a little slit and was then able to massage out a small stony formation. It was an irregularly shaped stone about 1½ millimeters in diameter and about 4 millimeters long. The last time I heard of the young man he had not had any similar trouble. (He just threw his tongue in the roof of his mouth, and I happened to see the stone. I intended seeing how good a job Dr. Guyton had done and examine his throat; and it was an accident that I saw it.) It was an unusual case to me, and in my own library I have not been able to find anything similar to it.

Dr. B. S. Guyton (Oxford): The case Dr. Wilkins mentions was one that I overlooked. I thought it was a gland swelling in his neck from his tonsils and I took his tonsils out, and when the patient went to Dr. Wilkins he found this little stone.

I had this peculiar experience in another case. A man with a sub-maxillary gland, greatly swollen, had a little discharge under his tongue. You could see a small opening under his tongue far back where the pus was coming out. His gland was greatly swollen and we could not do anything except take the gland out. I got a stone out of that sub-maxillary gland as large as my little finger, and a little more than an inch long, also a smaller stone about one-eighth inch in diameter. I think the largest measured 1⅛ inches long and ¼ inch in diameter. I have not seen anything in the literature in regard to this.

Dr. Chas. A. McWilliams (closing): I have had several cases of stone in Warburton's duct; all my patients have had great pain in the sub-maxillary gland when they have stone in the duct. I had one case which was traumatic in origin. The dentist was filling a toοth and he let his drill slip, and it bored a little place in the floor of the mouth. It bled for a while and he thought nothing would come from it, that it would heal up. About a month after she developed a large cyst right under the roof of the tongue on the side where he caught the tissues with the drill. That cyst was opened and healed up very nicely. I think we overlook a large number of dental cysts in the patient's mouths; in fact in the case of every patient who comes to me with all the upper teeth extracted, I am always suspicious of the small root cysts remaining in the floor of the maxillary sinus, because I have had quite a few in which, when they take a cold, they say they feel like they still have their teeth in, and when they bite down on an apple it seems like there is something up in there, and on roentgen ray you will find hardly anything except probably a thick membrane in the floor. Even at operation you find, as a rule, just a small polypoid tissue right where the teeth were, and as a rule you find one or two pockets of pus right over the roots where the teeth were extracted. It looks like you are running a big risk in not operating on those cases. Sometimes it is hard to get the consent of the patient without any pain in the maxillary sinus; they have an increased secretion that drops into the throat and they call it catarrh, but I think every case that has symptoms of focal infecion, if you don't find any trouble in the tonsils, or any pus in the nose, and she has all of her teeth removed, then you should go into that phase of it. All that is necessary is an operation where you get good results in most cases—it is a very simple thing—just to curette this small root cyst. You find dental cysts are very uncommon, but root cysts are more common than any of us think.

RADIATION TREATMENT OF NON-MALIGNANT DISEASES OF THE FEMALE PELVIS.*

S. C. BARROW, M. D.,

SHREVEPORT, LA.

The use of radiation in certain diseases peculiar to women has been accepted for years by many of wide experience as proper and as the one of choice. While the evolution has been slow, the development has been steady, and today it is the accepted opinion of scientific medicine that radiation in gynecology has a definite place, and at times is essential. With many the question of its selection and the exact indications are still unsettled, but there are few who deny it a necessary place in the treatment of benign pelvic diseases. It is unfortunate that all men using radiation cannot be good surgeons or gynecologists, and more unfortunate that surgeons attempting the use of radiation are not good radiologists, for then the personal prejudice which so often creeps in would hardly ex-

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ist. It is interesting to those who have watched the development of radio-therapy in gynecology from the day when it was denied as being of any value to the present time when the question seems to be not whether it will be of help, but rather which will be of more help in a given case, surgery or radio-therapy. This does not imply that radiation is indicated in all gynecological conditions, nor does it suggest that surgery has an unlimited indication. In many conditions one or the other is the invariable agent of choice, while in still other conditions only a most thorough knowledge of the individual case justifies a decision. These are facts which it seems are not at all times appreciated, or at least not acted upon, and a free discussion, without bias, of the indications and contra-indications of radiation and surgery in benign diseases of the female pelvis, can only result in good.

Leaving out of consideration the acute infectious inflammations, the sequellae of aborted or full pregnancies and others which are admitted by all as strictly medical or surgical problems, our attention is called to four classes of conditions in which radiation has proven its value, and in the treatment of which we should be prepared wisely to decide and choose as between surgery and radiation:

1. The menorrhagias or metrorrhagias of the girl and younger women.

2. The fibroid tumor and fibroid uterus occurring at any age.

3. The metrorrhagia occurring in women past middle age or about forty.

4. The chronically inflamed pelvis without pus.

In the menorrhagias or metrorrhagias of the young woman who has never conceived or experienced married life, it is at times exceedingly difficult to determine the cause, and in the majority there seems to be no cause except the inherent tendency of the uterus to bleed. In those cases where a careful examination excludes any blood dyscrasia, or local condition, as the cause of the hemorrhage and there is no constitutional condition, such as the anemias, the case may be classed as myopathic or idiopathic metrorrhagia and safely treated with radium which, when carefully used, promises the best result. The hemorrhage in most of these cases starts with the establishment of menstruation, or comes on within a short time afterwards and as a rule resists the curette and all medical measures. Such cases require the judicious use of radium, as the unskilled use may result disastrously. Gentle doses are used, 4 to 6 hundred mg. hrs., with thorough filtration and the use of an applicator that will cause the least traumatism and irritation. Some radiologists use much smaller doses than this, which is by far a better plan than to overdose. By this method, repeating the treatments at intervals if the hemorrhage returns, it can finally be controlled and a normal menstrual life saved. Care should be taken to thoroughly acquaint the family of the situation and safeguard the patient against discouragement should the hemorrhage return after the first treatment, else a hysterectomy will be their lot. This I have observed and experienced in my own practice.

In the older women, yet in the child-bearing period, we are commonly confronted with metrorrhagia or extreme menorrhagias which have resisted all medical and hygienic measures, and in which a thorough curettment gives only temporary relief. Most generally this condition comes on after, or is first noticed after the re-establishment of menstruation following childbirth. Here we will find as a rule a subacute or chronically inflamed and enlarged uterus in which the blood vessel walls have lost their muscular tonus, the uterine muscle itself being flabby and showing no contractility. A thorough curettement and proper tonic treatment in many of these cases is all that is necessary. In many

others it is ineffective, and a complete cessation of menstruation for a period of a year or more will relieve the uterus and pelvis as a whole of its constant engorgement which constant menstruation produces. The musculature of the uterus regains its firmness, the blood vessel walls their contractility, and later normal menstruation recurs. This can be accomplished only by the proper use of radium, or the galvanic electric current. We prefer radium as its action is quicker and more positive and in careful hands definite results may be expected.

Another type of case found in women of this age is the hard, commonly called fibroid, uterus. There is no distinct well-formed tumor, but the uterine vessel walls are firm and fibrous, rather than muscularly elastic. In this type the curette does no good and medication is ineffective. Radium is our only agent, and an amenorrhea of longer duration than in the preceding type of case has to be established. Larger doses of radium have to be given, and at times repeated. Many of these cases necessitate a permanent menopause, the majority, however yield and can be re-established in a normal menstrual life.

The second class which we wish to consider is the well defined fibroid tumor producing symptoms, you note I say "producing symptoms." The fibroid which is not causing hemorrhage or pressure and is not growing in a uterus which will not likely become pregnant, should be let alone. The question of the treatment of fibroid tumors usually provokes an argument between the surgeon and radiologist. When there is an argument both are wrong, for the indications for both agents seem clean cut, clear and well defined, and surgeons and radiologists should be broad enough and honest enough to admit them. Young women with the subserous, submucus, or any tumor which permits of enucleation without hysterectomy and without too great a mortality risk, should be operated surgically. In skilled hands, many such continue a normal menstrual life and bear children. In a young woman with an intra-mural tumor which would be extremely difficult or hazardous of enucleation, the treatment should be by radium, which if discreetly used can be made to produce a sufficient shrinkage of the tumor without producing a permanent amenorrhea.

Older women who have borne children and in whom the question of more children does not enter and who develop fibroids of the interstitial, or intra-mural type, should receive treatment by means of roentgen rays or radium. In those cases nearing forty years of age in whom a menopause is not undesirable, we invariably advise roentgen radiation. Roentgen-rays are applied with no discomfort and in competent hands, with no danger. The treatment is just as effective, consumes less time and is less expensive. In women of this age who have the subserous pedunculated tumors, or the sub-mucous type with small uterine attachments, surgical removal is preferable. The size of the tumor is frequently used as an argument for surgical removal. The first case treated by us was in November, 1914, and the size of a full term pregnancy. The tumor gradually disappeared and the patient is well today. We look upon a tumor which has existed a long time and which has no tendency to hemorrhage, as a more difficult one to treat than the rapidly growing one with a tendency to bleed, even though quite large.

All fibroids of the pedunculated type whether subserous or sub-mucous call for surgical removal if giving symptoms. The fibroid in the young woman which can be removed without removing the uterus, should be treated surgically. In all others regardless of age or size, radiation is indicated.

Our third classification is the metrorrhagias and menorrhagias occuring in women nearing or past the menopause. This class is the one most familiar to all of us, and the one most commonly met with. I know of no benign gynecological condition which

produces so much economic loss and complete physical breakdown as this class of uterine disease. In many the cause cannot be determined. In the majority a condition of chronic metritis exists, or else a general fibroid or sclerotic condition of the uterine body is present. These women, in the average, are physically disabled for fully half their time to say nothing of their suffering and the tendency of the condition to merge into malignancy if neglected.

The patients generally show a marked anemia, they are underweight, nervous, physically below par and usually have backaches, palpitation of the heart and so on ad-infinitum. A local examination shows a profuse discharge, the cervix is enlarged, congested, ulcerated and boggy, while the uterus is hard and firm and not so much tenderness or congestion exists in the pelvis.

Had radiation done nothing to advance the practice of medicine aside from its service in these cases, it would have fully justified its existence; as the situation exists today it appeals to me that radiation is the first agent to be thought of in the treatment of the menorrhagias of elderly women. Of course some may be tided over with a curettement and general hygienic and tonic treatment, but knowing how seldom the desired result is thus attained, why the loss of so much time? Surgeons in some sections are still doing hysterectomies for these types of metrorrhagias, but without justification in the light of information which is accessible to those who really wish it.

These patients are poor surgical risks, hysterectomy is a major operation, and but few women can be placed in the well column after removal of her pelvic organs, to say nothing of the mortality, the tedious convalescense, the prolonged hospitalization and the disorganization of the home routine as a result. With radiation we subject the patient to no danger, there is a minimum loss of time from home duties and the results are nearly all that could be wished for, while the total expense is hardly half.

Our fourth classification is the woman with a chronically inflamed pelvis. Any inflamed tissue with pus formation calls for surgical intervention, and the female pelvis is no exception to this. But where we have a pelvis which has been chronically inflamed and the products of inflammation have brought about a distortion and fixation of the parts, surgery is hardly indicated unless pus accumulation is present. These cases are made worse by the recurring menstrual congestion of the parts and a cessation of this function, permanent or temporary, according to the age and general condition of the patient, is indicated. If in a young woman, we prefer radium, administered per vagina. By this technique no trauma or irritation of the parts is produced and the dose can be graduated to the production of a temporary menopause. This will allow the parts a rest and sufficient reduction of the inflammatory process follows to relieve the discomforting symptoms.

In the older women we invariably use roentgen radiation, the whole procedure being carried out in the office with no hospitalization.

DISCUSSION.

Dr. Hilliard E. Miller (New Orleans): Dr. Barrow has handled his subject very ably and presents some very splendid reports of his success with radium and roentgen ray treatments of malignant and benign pelvic pathology. As a gynecologist and also as one who has had considerable experience with radium in similar lesions, I must, however, disagree with him on several points.

We have come to recognize definite indications for the use of radium in pelvic pathology, and from experience, have learned to stay within these limitations. I do not believe that there is but very occasional indications for radium for fibroids in women under 35 years of age, as the surgical handling of these cases, especially myomectomy, gives such splendid results and carries with it a mortality not greater than the average abdominal operation. Menopause precipitated in such cases

by the use of radium leads to many disturbances, symptoms and troubles which we are unable to combat. Besides, myomectomy gives fair promise of relieving the sterility which so many of these patients have had.

Fibroids larger than a three months pregnancy, irrespective of type, should be treated surgically as radiation of these growths frequently leads to necrosis and sepsis.

Undoubtedly there are cases in very young girls where a thorough physical examination will reveal anemias, constipation, hypothyroid and ovarian functions, which explain menorrhagia. These conditions should be treated only medically and the general health of the patient taken care of.

There are no conditions which give more splendid response to the effect of radium than the hyperplasias and chronic fibrosis conditions in women around the age of 38 and upwards. It has been the very exceptional case that has had to return for a second radium application.

I believe that the careful post-partal attention to women would eliminate to a large degree the number of chronic hyperplasias and fibroses which occur. Careful attenton to erosions and eversons of the cervix, correcton of uncomplicated diplacements with pessaries after a labor will aid materially to this end.

Under no circumstances should radium or x-ray be used in any cases where there is any suggestion in the history or any evidence in the physical examination of an existing or pre-existing inflammation about the tubes, ovaries, uterus or cul de sac.

Dr. S. C. Barrow (closing): Dr. Miller says something about "bleeding being due to other causes," etc. Of course, that is very true, and I tried to make it plain that the thought in my mind was correct diagnosis before treatment. He speaks of the old condition existing and "if the woman had been properly attended to after the birth of the child"—that is true, but they come to us in that condition and we cannot go back twenty years to correct these things.

In regard to babies. If you radiate the uterus and the patient continues to menstruate afterwards, she can have a baby. I made it particularly clear that radium should not be applied to an old pelvic inflammatory disease. But doctors seem to forget that there is the roentgen ray, from which no flare-up follows, and which is as effective as radium.

In trying to get up some data on this subject I ran across this informatin from Dr. Matas, and will quote some of the paragraphs I have marked off. He says: "The pure technician and laboratory expert and radiologist are likely to be too enthusiastic over the potentialities of radium. The surgeon whose long training and skill have given him confidence in the outcome of his operations is only too likely to depreciate its real value and to circumscribe its application by too many restrictions." Then further: "Radium has cut down my operations for this cause (speaking of fibromas) by over sixty per cent." Referring to the type and size of growth, he says: "I do not believe that the mere size of the tumor is a contraindication to radium, provided it is an intramural growth of the soft, rapidly growing, bleeding type in which the canal is elongated sufficiently to allow the radium to be deposited in its interior." This statement of his, in particular, struck me: "Personally I would express my conviction in regard to the superiority of radium in this class of case by saying that in the case of one of my family, my wife, my daughter, or some one over whom I had authority, or for whom I felt a direct responsibility, I would unhesitatingly look to radium as my first choice."

I close my discussion by quoting Dr. Matas along those points.

CHRONIC BARBITAL POISONING.*

E. McC. CONNELY, M. D.,

NEW ORLEANS.

In 1903 diethyl barbituric acid or Barbital was placed on the market under the trade name of Veronal. It was widely advertised as an efficient. safe, non-habit forming hypnotic and at once became extremely popular not only with the medical profession, but with the laity. This popularity soon caused it to be followed by an ever increasing number of allied drugs, such as luminal, dial, amytal, allanal, etc., until at present they are legion, and one is constantly hearing of others.

These preparations are all put out by the various chemical firms under different trade names, and vary from each other in some detail of chemical formula, usually the substitution of one alcohol radical for another,

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*Read before Orleans Parish Medical Society, May 29th, 1927.

or the replacing of an alcohol radical by a basic salt, but all belong primarily to the barbituric acid group of drugs.

The producing firms circularize extensively, distribute samples freely to the profession, publish the chemical formula of their product and make more or less exaggerated claims as to its advantages. Their detail men visit our offices and are voluble as to the superiority of their drug and explain that it is different from the others. This difference is sometimes not in formula but in physiological action. Just a short time ago I was told this—the pharmacopoeia to the contrary notwithstanding. This enthusiasm is, of course, to be expected.

The usual point urged is the perfect safety of their drug, both as to habit forming and as to acute poisoning, combined with its efficiency, but I have yet to see the detailed physiological action of the drug in one of the circulars, an antidote for it, or the outline of treatment for acute or chronic poisoning by it, nor is there any mention of the occurrences of idiosyncrasies in individuals.

As a matter of fact, there are some differences in the action of the various drugs, as is shown in specific instances, such as the control of epileptic seizures by luminal, *phenyl ethyl barbituric acid*, and also by the different reaction we occasionally get in the individual patient; but generally speaking, so far as I have observed and so far as I am able to ascertain from the singularly meagre literature on the subject, their action is the same. Barbital together with its sodium salt, medinal, and luminal with its sodium salt have been placed in the pharmacopoeia, and I shall therefore speak of barbital, but with the feeling that there is but slight difference of action from the newer and less known preparations.

It has little, if any, action on the heart itself, but affects the vessel walls, causing dilatation, especially of the abdominal vessels and the capillaries, thereby slowing circulation, reducing oxidation, dissipating heat and lowering body temperature. Sands, quoting several authors, says that the hypnotic affect is produced by slowing the cerebral circulation which lowers the carbon dioxide-oxygen exchange. Elimination through the kidney is slow, a relatively small amount is broken down in metabolism and as much as 90 per cent has been recovered from the urine where small doses are used. This percentage is decreased when larger doses are given.

The margin of safety between the therapeutic and the lethal dose is fairly large, most authors placing the lethal dose for the average normal individual at between 50 and 100 grains, and there is a record of a patient recovering after taking 125 grains, but the cumulative action is always to be guarded against; and people with a idiosyncrasy are more or less frequently encountered. I have seen a patient go into active delirium after a dose of 5 grains of veronal (a week later she got the same same effect from one and a half grains of dial), and there is a record of collapse and death after 10 grains. Aside from the above, one encounters reports of acute poisoning fairly often in the literature. In 1911-13 veronal held seventh place as cause of death from all poisons in England and Wales, and Leake and Ware report sixty-one cases of acute poisoning in a period of two years at a Los Angeles Hospital.

We have also the chronic poisoning, or more properly, the chronic intoxication occurring with the continued use of the drug over a long period of time, which, in my opinion, is more to be guarded against, as it is much more apt to occur with the unwary, and because of the pronounced mental and physical symptoms, it is most difficult to diagnose without a direct history of the use of the drug, especially from chronic encephalitis lethargica.

The third type of poisoning, that of the habitual user of the drug, seems to receive but scant attention. One sees little mention of it in text books and all through the

literature it is completely overshadowed by descriptions of the symptoms displayed in the more active forms of poisoning, especially those of the acute poisoning, and is referred to more or less in passing as it were.

That barbital is habit forming is beyond a question of a doubt; any drug which will relieve pain or produce sleep is habit forming, perhaps not in that it will create an apparent physical need for itself, as does opium and its derivatives, but rather more like the addiction to cocain and alcohol, in which the patient can get along without the drug if he would, but he won't, because he has learned to depend upon it and cannot resist its temptation. Peterson, Haines and Webster in their Legal Medicine and Toxicology say of veronal, "cases of chronic poisoning and habit formation began early to be reported," and refer to an article by Kress written in 1904, one year after the intoduction of the drug. Leake and Ware in analyzing their 61 cases of acute poisoning mention that 18 were habitual users of barbital as against 10 alcoholics, 8 morphin addicts, and 1 cocain user. When one considers that in their group of patients, which was more or less selected in that they forcibly brought themselves to attention by taking lethal doses of the drug either from suicidal intent or otherwise, the number of barbital addicts equaled the total of the two most generally thought of habit forming drugs and come within one of equaling that of three, it is significant.

I know of no statistics that will give us an accurate idea as to the prevalence of this condition, but believe it to be far more common than is generally realized. This is due, of course, to the fact that most of them go quietly on their way without attracting attention, some of them never realizing themselves that they are drug addicts, blaming everything else until something happens. When it does, we see them, but, as often as not, we overlook the chronic underlying condition in meeting the more urgent symptoms of the acute situation, or possibly overlook the drug factor entirely, which without a direct history is not hard to do.

Sands states that "barbital addiction results from the repeated taking of the drug by an emotionally unstable person who resorts to it in his inability to meet reality." He adds that it deadens sensibility and gives a spurious feeling of well being, relieving them of their sense of responsibility. Leake and Ware analyze the mental status of their group as ranging from a mild depression to manic-depressive insanity. Constitutional psychopathic inferiority was markedly in the majority.

These observations as to the native mental characteristics of the barbital addict are probably accurate as far as they go. They would probably apply to the average group of drug users whether the drug be opium, alcohol, or anything else. I am familiar with the type of patient in Bellevue Hospital, N. Y., where Sands made his observations, and I should think his estimate correct, certainly his "emotionally unstable person" is sufficiently broad, but we should not conclude that barbital limits itself to the abnormal and the weakling any more than other habit forming drugs. On the contrary, it recruits the ranks of its habitues from other types more than any other drug, except alcohol; this, because many people who would never think of taking opium or its derivatives will continue to use a "harmless non-habit forming drug," and because in Louisiana and most other states there are no checks on the sale of it, and the only safeguard is the conscience of the dispensing pharmacist. Consequently there are many people going blithely on their way little realizing their danger until something happens.

Clinically, the mental symptoms overshadow the physical evidence in most cases and vary in accordance with the degree and duration of intoxication. In the mild form there is a psychasthenic reaction in which

the patient is vaguely restless; mildly depressed; emotionally unstable; unable to make decisions; obsessed with vague fears; shuns responsibility; is somewhat irritable, with insomnia, loss of appetite (generally), constipated and probably has tremor of tongue and fingers; frequently dizziness. In the more advanced form after long use they are depressed; markedly inactive both physically and mentally; deteriorated; retarded; seem unable to express themselves freely; selfish and self-centered; memory poor; worry excessively; easily excited over trifles; become lachrymose on slightest provocation; occasionally delusional. The physical condition in this stage is more pronounced also, they are anemic, the muscles are wasted, soft and flabby. They tire very easily, becoming exhausted at the least exertion and frequently complain of "palpitation." Ataxia is quite evident; there is marked tremor of tongue and extremities. The speech is striking, being hesitant, practically a stammer with a slurring drawl or rather more of a whine, at times it seems to be fairly "dripping tears."

On the whole, both mental and physical deterioration is rather more rapid than with the opium derivatives. I know of no definite specific treatment for the condition. The gradual reduction with thorough elimination, always observing the proper precaution as to the psychic reaction of the patient, has worked as well in the mild cases which were of comparatively short duration as anything else. I have never known of an aggravated case being cured; that is, permanently cured, generally they refuse to make an effort. About all that can be done, all they will permit, is to establish elimination and attempt to recoup their strength by forced feeding, etc.

The prognosis as to the permanent cure of the habit is rather grave and depends entirely upon the type of individual, the stage of deterioration he has reached, etc., and, as with all drug addicts, the environment.

In conclusion, I would by no means condemn this drug, nor any of its family. On the contrary, I believe it is a most valuable therapeutic agent and should not want to be without it, but I believe it should receive the respect to which it is entitled. That we should bring ourselves to realize its potentialities both as to acute poisoning and as to habit formation, and in prescribing it we should exercise as much discretion as in giving morphin or any other opiate. And the sale of it should be properly supervised and regulated, so that it would not be possible, as it is today, for any man, woman or child to walk into a drug store and buy it over the counter if the druggist chooses to sell it.

DISCUSSION.

Dr. Walter J. Otis (New Orleans): Hypnotic urea should at all times be used cautiously in every case. It is well to know the pharmacology and the fate of these drugs, and likewise in prescribing to understand the idiosyncracies of the patient. Unless one is conversant with these facts the result may be disastrous, *i, e.*, in all neuro-psychiatric and psychopathic cases, there would be a tendency to project further the desire for these drugs.

Then, again, cumulative effect must be taken into consideration, as these drugs are excreted slowly, so that an intoxication is produced resulting in death, as in the case of necrosis of the kidney, without the usual signs of nephritis. Especially is to be condemned the habit of prescribing promicuously these derivatives over the telephone. These drugs are not a panacea for all ailments.

Dr. Randolph Lyons (New Orleans): I do not know of any drug that all of us use any more than the barbital group, and it is a little bit startling to discover that we are giving habit forming drugs. I did not realize it except in the case of veronal. Veronal, I know, has a habit-forming tendency and I rarely prescribe it except for a few days, but I have prescribed luminal very extensively and have never seen an instance where the patient could not stop taking it. I have never thought of the actual chemical composition. As Dr. Connely states, there is not much to be found about this in the literature, but there must be sufficient differences between them to make some of them habit-forming and others not. Luminal is extremely effective, widely used, and, so far as I have seen no habit has been formed through its use.

Dr. E. McC. Connely (closing): I do not disparage the use of these drugs; they are valuable, and I would not want to be without them. With regard to luminal: Last week or the week before, a doctor in one of the hospitals told me of a case that I referred to him, an epileptic who had been taking luminal for a long period of time (how long I cannot say, having seen her just before she went away). He dropped the luminal and she died within a week. The doctor said he was convinced that stopping the luminal had considerable to do with her death.

Luminal is habit-forming, as is veronal or any of the others, but not as morphin is habit-forming, but as alcohol is. After individuals of a certain type have learned to depend upon it, they will not do without it. The great danger is that anyone can go to the drug store and buy as much as they wish. If they know the name of the drug they ask for it and the druggist will sell a bottle of luminal, or veronal, and they feed it to themselves.

About a year ago I had a patient who had been taking luminal three times a day for nervousness. I am sorry to say that he was told by the doctor who prescribed the medicine to take it home and use it. He did not see the patient again, and when called by the family said: "I told you you would not get any results from that medicine for a while." When I saw the patient he had a marked psychosis and it took about six weeks to eliminate his toxemia.

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THE SOCIAL HYGIENE PROGRAM.*

VALERIA PARKER, M. D.,
Field Director of the American Social Hygiene Association.

Social Hygiene, as it has become accepted in the United States, has both a broader and narrower significance than is given it in England and on the Continent. In those countries it is thought of as dealing with a broad group of maladies to combat which many research and propaganda agencies have been formed. Here its connotations are limited to problems dealing with and growing out of sex relations, which, medically at least, confine its activities to the discovery and development of measures to control and prevent the venereal diseases.

Though thus limited in a medical sense, however, the field of social hygiene in this country has come to embrace the study of a far broader series of acts and conditions which bear directly on the welfare of the family and the home. Such problems, for instance, as marriage, divorce, illegitimacy, prostitution, and other forms of sex delinquency—these and their like which tend to sustain or destroy our basic social relationships, are considered definite and proper questions to be investigated and, where possible, adjusted by the agencies working in this field. Many of these problems would exist if there were no so-called venereal diseases, although oftentimes they are aggravated and made more difficult of settlement through the presence of these diseases. Further than this, social hygiene in its positive aspects aims to reach not only those who might otherwise become immoral, but every individual. Sex education should be a natural, logical part of the life-training program of all.

The earlier stages of the movement in this country were marked by the forming of several organizations, all having the general purpose of bettering social conditions, but each seeing its own program as of greatest importance. Perhaps the best grouping of the three major bodies of opinion would be: first, those whose primary object was to treat and cure the venereal diseases by medical measures; second, those who were affronted by the commercial prostitution which prevailed so widely and waged their fight by means of legal measures; and third, that group who were bent mainly on securing wholesome, accurate, character-training education for all

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—particularly for youth. In the early years of this century various members of these groups commenced to think more and more in terms of a broader program which would include the best features of all of their individualistic plans and would unite the forces working toward a common end. This realization of the desirability of and necessity for a far-seeing, comprehensive program to meet the many and varied problems which are inherent in this field resulted in the merger of several most important voluntary agencies in 1914 and the formation of the American Social Hygiene Association.

Approximately three-eighths of the budget of the American Social Hygiene Association is used in the promotion of educational measures, because it is understood that through education we stimulate the individual to make wiser choice in regard to companionship and conduct. In this work the association is co-operating with a number of other organizations in the promotion of the Social Hygiene programs. These include the National Congress of Parents and Teachers, the Federal Council of Churches, many universities, colleges, normal schools, Y. M. C. A.s, Y. W. C. A.s, and other educational institutions.

Expert opinion on the forms of laws relating to social hygiene and the best methods of administration for their enforcement is furnished by the Division of Legal Measures. It makes impartial surveys of communities, with particular relation to prostitution conditions; it carries on special legislative work in aiding state and local groups in attempts to secure the revision of inadequate laws, or the enactment of new ones relating to social hygiene. Over a ten-year period the association, through this department, has actively promoted the passage of "red light" injunction and abatement laws in twenty states.

"There can be no question from a sociological standpoint that the prevention and cure of venereal diseases is probably the most far reaching factor in bringing about the health and happiness of the man, woman and child in the community." This statement, from a recent publication of the National Committee on Prisons and Prison Labor, emphasizes anew the importance of medical measures in the broad social hygiene program.

In common with all agencies engaged in the campaign against the venereal diseases, the American Social Hygiene Association has for one of its objects progressive reduction in prevalence of these diseases. Prolonging life by early and continuous treatment is equally important to those infected and to the public.

To these ends, the Association's Division of Medical Measures works in many ways. More effective methods of diagnosis, treatment and control of syphilis and gonorrhea are developed by research; demonstrations of the applicability of new methods are worked out with special groups. The new information thus secured is disseminated through technical articles and news items prepared for the various professional journals, and a regular informational correspondence service is maintained. Lectures are given, and films, exhibits, posters and special pamphlets are circulated to inform the public of the essential facts thus introduced into practice. Close co-operation with the United States Public Health Service, the State Boards of Health, City Health Departments, and voluntary agencies makes possible concerted progress. The division constantly endeavors to stimulate active co-operation of physicians, nurses, social workers, dentists, druggists and others in promoting the public health and welfare aspects of venereal disease prevention and control.

To measure, we must have a base line. In an effort to secure statistical data which can be used for a base line from which to measure future trends in syphilis and gonococcus infection, the medical division is making studies of the incidence of these diseases in a number of selected cities.

In 1925 studies were made in Detroit and Atlanta, where the medical staff obtained from practicing physicians, clinics, hospitals and other institutions having treatment facilities, a report of the number of cases of venereal diseases under treatment or observation on a day specified.

The same procedure is being carried out in Cleveland, Syracuse, New Haven, and at the Cattaraugus County Health Demonstration (N. Y.). Other cities in which preliminary observations are being made with a view to instituting similar studies are Des Moines, Iowa; Kansas City, Missouri; Houston, Texas; Portland, Oregon; Denver, Colorado, as well as Health Demonstrations at Athens, Georgia; Salem, Oregon; and in Ruthford County, Tennessee, and at the Klamath Falls Indian Reservation, Oregon. So far as possible the United States Public Health Service has co-operated in these studies and is at present making additional studies in several cities in West Virginia, Illinois, Indiana and elsewhere. Dr. Walter M. Brunet, director of Division of Medical Measures, serves as a special consultant to the Service in connection with this work.

The Division of Protective Measures deals with those measures which may be adopted by a community for the protection of adolescents. Such measures include the appointment of police women; the licensing and supervision of cabarets and dance halls in which young people congregate; and the provision of wholesome recreation facilities. It is interesting to note that throughout the country districts a great deal of difficulty has been experienced in connection with road houses and amusement centers lying outside of city jurisdiction. The State of Wisconsin has attempted to solve this problem by passing a law permitting the appointment of county supervisors to be responsible for amusement centers and road houses outside of city or town jurisdiction. The National Probation Association, the American Social Hygiene Association, and the Department of Sociology of the State University of Wisconsin have recently completed a joint study of the working of the Wisconsin law, and it was found that when qualified persons have been appointed the results have been satisfactory.

The various divisions of the American Social Hygiene Association are rendering service as they have opportunity in promoting the whole of the social hygiene program. This is the type of program instituted by the United States Government during the World War; it was in a large measure successful although it did not protect all the men desired; there was some sexual promiscuity, but far fewer men proportionately became infected with venereal diseases after entering the Army and Navy than were infected in their communities prior to enlistment. In other words, we were able to demonstrate that a thoroughly well co-ordinated program is effective in the control of venereal diseases. During my administration of the United States Interdepartmental Social Hygiene Board, we were able to demonstrate that wherever sexual promiscuity was high the venereal disease rate was correspondingly high; that when, through law enforcement, commercialized vice was done away with, the hospitalization of soldiers and sailors was considerably diminished. The same facts hold true in the civil communities, although it is more difficult to demonstrate this as we have not such control as will give us statistical evidence.

New Orleans has taken the first step in law enforcement in doing away with the segregated district; we hope she will take the second step and make all houses of prostitution dangerous to operate, as well as put an end to open street solicitation of prostitutes. Whatever may be true of the difficulty of getting rid of sources of venereal infection, it is evident that the open market presents the greatest opportunity for infection. Other cities, including New York, have done much in counteracting this evil, in spite of such difficulties as varied racial populations, large numbers

of transient visitors, and constant alertness on the part of those who profit from the commercial exploitation of prostitution.

The American Social Hygiene Association has much literature on various phases of this subject, and publishes a monthly journal which carries scientific articles, news and book reviews; I present this program as one which will benefit any community and in which the medical fraternity has shown its belief by constantly increasing co-operation.

BREAST TUMORS.*

A. C. KING, M. D.,

NEW ORLEANS.

The female breast adds beauty and symmetry to the human form, and is a wonderful source of comfort, pleasure, and life to the nursing infant, yet it is the seat of malignancy almost as frequently perhaps as any other organ of the human body. Subjected, as it is, to the trauma of nursing, trauma of tightly fitting, or improperly fitting clothing—especially the high corset or the modern brassiere, trauma from other causes, due to its exposed anatomical location, it is no wonder that the tumor growth is so common.

One case of cancer, coming under my observation, occurred in a childless married woman, was caused by trauma inflicted by the frequent carrying in and out of the house, during the winter, of heavy potted plants.

The question of properly fitting clothing in females is an all-important problem, yet physicians are not consulted in matters of this character. If a tightly fitting pointed shoe, a couple of sizes too small, fails to give pain or trouble, the wearer trips along quite happily. If improperly fitting clothing gives no trouble, she continues to be happy, yet, when nails grow in, or painful callouses develop, or a large breast tumor is discovered, then, and then only, is the doctor consulted.

Naturally we men folks are not supposed to know when milady's corset is properly fitted. Neither does milady, for that matter, as witness the fat dames as their ample forms shrink to half size under the efforts of a muscular attendant, as she strains and strains at the laces. I recall an autopsy some thirty-five years ago on an old colored woman of some eighty winters, in which the imprint of her ribs was plainly evident on the liver, and I dare say she had not laced for thirty years or more. Now, if a colored woman can lace to such an extent, what must we expect from our own women in their efforts to conform to present standards of style.

Today the majority of women wear a modern contrivance, or harness, called a brassiere. This is essentially a binder, apt to produce more or less bruising, and, in time, damage to the breasts. I have seen the breasts of young girls, wearing this binder, so flattened against the chest and so elongated and flabby as to resemble the breasts of a nursing mother. I wish and hope that the medical profession as a whole will some day take up the cudgel against this particular type of female apparel. I have no doubt the damage incident to pressure must in some way interfere with the function of lactation later on in life.

Remember that we bandage an engorged breast for support and pressure, particularly if we desire to dry up the milk in cases of still birth or premature labor. Why then should not pressure long applied during young womanhood tend to limit or interfere with milk production, by damaging the secretory apparatus of the breast? Enough babies now have bottles wished on them, without adding to the number by permanently disabled breasts of the nation's future mothers.

Regarding tumors, the surgeon's greatest trouble lies in the fact that comparatively

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few cases of breast tumor apply for operation in the early stage; that is, as soon as the tumor is found, and before metastatic advancement has occurred, if of a malignant character.

Our greatest difficulty lies in not having an opportunity to make a definite diagnosis sufficiently early to effect a cure. In many cases, this is impossible without microscopic aid, which means a rush diagnosis at the operating table.

Given a tumor, small or large, easily rolled under the examining hand, not adherent to the skin, and without axillary involvement, with a normal nipple, with a history of months or year standing, the usual diagnosis is that of a benign growth, but there is always the possibility of malignancy.

Given a tumor following a breast abscess, with axillary involvement, and the diagnosis of malignancy is questionable.

Given a small tumor in the breast of a young women, without other symptoms, we can reasonably make a diagnosis of simple benign growth. However, let us keep in mind this rule—any breast tumor, no matter how innocent to the eye, or to the finger, in a woman of any age, is potentially malignant.

Small growths in young breasts may lie dormant for years, yet after marriage and childbirth, such growths, due to the trauma of nursing, may become malignant.

Infection traveling from without inward through the nipple is also a probable cause. We know that trauma of bone is often responsible for bone sarcomata. We also know that breast cancer is most common between the ages of thirty-five and fifty—that is, near the end of the child-bearing period, after the trauma of nursing is fairly over. Also, at this age, normal resistance to disease is diminished.

We must also take into consideration the family history. Many of you have observed more than one female member of a family afflicted with breast cancer. I recall a father and two sons who died of cancer of the stomach—two sisters with breast cancer. Thus, heredity or environment plays a part.

Barker aptly says: "Physicians are forced, therefore, to take into account what they call differences in disposition to disease," and to "try to determine in how far disposition is inherited and in how far it is acquired." We do not always know.

The diagnosis of breast tumors is considered by most men as fairly easy, but be not deceived. After years spent in handling and operating all classes of these tumors in our service at the New Orleans Charity Hospital, we are often in serious doubt as to a definite and positive diagnosis. Black, of Indiana, in a most comprehensive article a few years ago, stated that, as a member of the Board of Medical Examiners, he was struck by the fact that in answering the question, "What are the early signs of breast cancer?" all except a small per cent gave retracted nipple and axillary involvement as early diagnostic signs. These are late signs, not early.

Many cases come to us with tumor growths as large as a big orange or a cocoanut, hard and nodular, the axilla filled with cancerous glands, sent in as abscess, often with an incision an inch or two in length. These cases a blind man should be able to diagnose, and yet they continue to come.

The question of metastasis is important in the study of breast tumors. In nonmalignant growths, and in the very early stage of cancer, there is none. In cancer it is always present in the axilla, sooner or later, whether the glands are palpable or not. Study the lymphatic system of the breast and axilla and you will more clearly understand this statement. The axilla can be beautifully cleared of fat and glands at the time of operation, yet we are never sure of removing all diseased tissue.

If mediastinal involvement has occurred, and sometimes this is easily determined by the roentgen ray, the case is hopeless insofar as cure is concerned. This confirms then the absolute need of early diagnosis and early operation.

In a case coming to us and dying before operation, autopsy revealed breast cancer, axillary cancer, mediastinal cancer, and cancer of both the stomach and liver. In another, a younger woman, dying after operation, autopsy showed clean breast and axillary wounds, no mediastinal or stomach or liver involvement. Individual resistance probably accounted for this, but it opens up the question as to how much glandular involvement exists in a given case, internally, and where it is.

Again, it gives us an insight into a class of cases apparently almost hopeless, yet in which, if a clean, complete operation is done, life is prolonged far beyond our expectations. We have no way of determining early internal organic metastasis, or if existent at all, so it is our duty to give these women the only chance open to them,—that is, radical operation, with subsequent applications of radium or roentgen-ray. I have no statistics to present, as all of my Charity Hospital cases are negro women, and they never report unless recurrence occurs. At any rate, statistics can be so juggled as to become valueless. Breast cancer in colored females appear to be as common as gall bladder disease is rare, and certainly far more prevalent than in whites.

I have often wished that breast cancer would announce itself earlier by giving early pain and plenty of it. Women having cancerous breasts twice or three times the normal size often complain of little or no pain, unless ulcerated,—only of a dragging sensation and a "lump" under the arm. Many are sent in for abscesses, which have undoubtedly been cancers from incipiency.

The low mortality from acute appendicitis is accounted for by the fact that the appendix announces itself early in the game, thus giving the patient and the doctor warning of an impending volcano, while breast cancer is insidious and slips around like a thief in the night.

Now to answer the question, "What shall we do?"—Operate in all cases? The consensus of opinion is that we should. In young women, these "potential cancers" are easily removed, often in the office under local anaesthesia, leaving but little scar, and certainly ridding the patient of possible future trouble. As a rule, if the danger of permitting these growths to remain is explained to the average mother, the majority will consent to an operative procedure, particularly if it is only of a minor nature.

A microscopic examination should be made of even the most innocent looking tumor, as a protection to both patient and physician. It is a simple case of "prevention is better than cure," and we all realize the hopelessness of cure in true breast cancer, as we see it to-day.

As for cancer, nothing short of a radical operation is worthy of consideration,—just as radical as it is possible to make it. Sacrificing the pectoral muscles, cleaning the axilla absolutely clean, and even sacrificing skin to the point of a subsequent graft, is good surgery, and the only kind offering hope to these unfortunates. Radium and roentgen-ray later is of value. Some operators lay back the flaps at operation and shoot in heavy doses of roentgen-ray promtly after operating. I am not in a position to advise regarding the value of this method.

Cheatte, of London, very aptly remarked that "Chronic Mastitis" is a misleading term because it seldom refers to a true inflammation of the breast, also because the clinical signs generally considered to be connected with it mask many and varied states of breast hyperplasia. It is a dangerous diagnosis, because these clinical signs may hide carcinoma in its earliest stages, advanced carcinoma in rarer in-

stances, and many other states of epithelial hyperplasia.

Cancer occurs at any age after puberty. We have just operated a case in a prematurely developed girl of eleven, wherein a diagnosis of benign tumor has been made, which, much to our surprise, the microscope pronounced carcinoma.

In 1914 we did a radical operation on both breasts for carcinoma in a girl only fourteen years old.

We would advise, therefore, the removal of every operable tumor, large or small, in every breast, young or old. This may sound a bit radical, but all experienced operators are to-day pretty much of this opinion.

DISCUSSION.

Dr. P. B. Salatich (New Orleans): This is certainly too important a paper to pass over without comment. The percentage of true cancers to what women call "lumps in their breasts" is probably one to twenty-five or more. So many of them come to us with that "little lump." My experience has been that later they return and tell us: "Now, doctor, I have had this lump for a long time, and, while it is not painful, I know that it is there, and it worries me." I have been watching these cases very carefully for twenty years, and believe that the first indication of pain in these neoplasms, in a large majority of cases, is incipient cancer, cancer beginning to implant itself on these tumors. I remember a patient who for years had had a lump in her breast, which at several different times I examined. She always said: "It does not worry me. I do not want to be operated on." But later she told me: "Doctor, I am beginning to worry about this lump, it is causing pain." I informed her of my suspicion of beginning cancer and advised removal of the neoplasm. Microscopic examination showed beginning cancer implanted in the mass, involving probably one-sixteenth of the growth.

Now, with regard to removing these lumps, or treating them without removal, I think all of us, before we have had sufficient experience in their treatment, give these patients salves and try other non-surgical methods of treatment. You will find that not one in seventy-five so-called "lumps" will answer to any salve, and I strongly urge, since it can be done so easily, even under local, that every "little lump" that comes to your office be removed.

Dr. S. C. Barrow (Shreveport, La.): I feel that I would be a little recreant to my duty as a representative of that branch of medicine, radiology, if I did not speak a moment on this subject. You are all familiar with Ewing, the pathologist, and in his discussion of carcinoma he winds up his paper by stating that radiation therapy is the "first rational treatment for carcinoma ever devised." Of course, he did not mean that it was the only treatment for cancer, but that it was on a scientific basic foundation. In reviewing the histological and biological studies he has made, there are two outstanding facts that would justify that statement. It has been conclusively demonstrated that a very small proportion of cancer cells, which have been previously radiated (roentgen-radiation of the organism proper within the host) take following transplantion. It has been also demonstrated without any question, that tissue which does not contain cancer, if fully radiated, and then implanted with cancer cells, the cancer cells will not grow. These are facts that admit no discussion today; they have been proven and accepted.

I have a little resumé that I took from "The Journal" sometime ago, a report from the Memorial Hospital, given by Burton Lee, surgeon, and Herrington, radiologist, demonstrating the results, first, with surgery alone; second, with operation plus post-operative radiation; and, third, with operation plus pre- and post-operative radiation. After the five-year period was up, they selected three series of cases, as similar as possible. Series No. 1, consisting of one hundred cases in which only surgery was used, showed that, after five years, 24 per cent of these women were well and free of cancer. Series 2 embraced one hundred cases that were operated on and then radiated. After five years, 38 per cent were well and free from cancer. In series 3, where the treatment consisted of operation with radiation before and after, properly and thoroughly given, 52 per cent were well and free after the fifth year, a jump from 24 per cent, where surgry alone was employed, to 38 per cent with surgery and post-operative radiation, and to 52 per cent with pre- and post-operative radiation.

Dr. Herrington closes his remarks by stating that "operable cases of cancer of the breast should be treated by radiation only." I am not willing to take the responsibility of working that way yet. Dr. Lee, the surgical representative of that team, says: "I am most enthusiastic about the pre- and post-operative radiation of cancer of the breast." I feel that, coming from two men of that kind, working under the advantages that they had, their statements at least should carry some influence, and we urge that, if the case is going to be operated, have your patient thoroughly radiated first, and then radiate after the operation also. After

radiation operate, then repeat the radiation, giving your cases 52 per cent chance instead of 24 per cent.

Dr. E. Denegre Martin (closing): What Dr. Barrow has just said can be borne out by statistics, so much so, that today we always have these cases radiated after operation. Now, whether the improvement is due entirely to the radiation, or operation plus radiation, or getting them earlier and doing more operations, I do not know. However, in the face of the evidence, I am inclined to think that we would err if we did not use radiation.

I would lay stress on the importance of early diagnosis in these cases. I believe that when a woman comes to us we should make an inventory not only of her pelvic organs, but examine the breasts as well. I do this in all cases, and very frequently have been rewarded for my efforts. In examining for a growth in the breast, do not use the fingers only, use the whole hand, employing a gentle, rolling motion, and you can feel any masses; sometimes bi-manual palpation may be necessary.

In operating on these early cases, make a Collins incision and take out the tumor from beneath without mutilating the breast. Women will submit more readily to operation when they know this can be accomplished. When a neoplasm is recognized, it should be watched and removed as early as possible. Very often an earlier diagnosis is arrived at through pressure of the brassiere on the breast causing pain which previously had not been experienced.

When we recall that the breast has five sets of lymphatics, superficial and deep, anastomosing with the lymphatics of the entire body, we can better explain metastasis. It is not confined to the axillary glands, but is just as liable to take place in the liver or other organs of the body. When, however, the involvement is confined to the axillary glands, the prognosis is much better. I would, therefore, stress: (a) Early diagnosis, (b) early operation, (c) application of both surgery and roentgen-ray.

PRE-OPERATIVE AND POST-OPERATIVE CARE OF PROSTATICS.*

P. JORDA KAHLE,

NEW ORLEANS.

Although distinct advances have been made in operative technic in prostatectomy, these can hardly be held accountable for the remarkably low mortality of today as compared with the almost discouraging losses of former days. The difference in results must be sought elsewhere. Empirically at first, and by laboratory tests later, it has been shown that neither the time consumed in performing the operation, nor the coincident infection of the bladder were factors of great moment in determining the end results. Cases expeditiously and skillfully operated, as well as those with clean and uninfected bladders, succumbed. Cystostomy, whether performed under local or general, has its toll and this toll was, and still is, greater than that exacted by the removal of the hypertrophied gland. Many fatalities attributed to prostectomy should rightfully be laid at the door of cystostomy. This we came to realize with the knowledge gained by study of the data given us by the various tests for renal function, and by blood chemistry. The most important, we might say—vital, information gained, is that the sudden decompression of the kidneys with resulting acute congestion and the insufficiency resulting from destruction by nephritis, pyelonephritis or pyonephrosis must be borne in mind, and all efforts must be directed to prevent the occurrence of the first, and the improvement, if possible, of the second.

A general disregard of either of these possibilities is responsible for the high mortality rate still prevalent in prostatectomy as done by the general surgeon. This is true because a one stage operation is done in the face of a large residual urine or because, if a two stage operation has been decided upon, the second stage is undertaken without complete study to determine the sufficiency or the stabilization of the kidneys. It is unfortunate that routine has been responsible for the second stage, the enucleation of the prostate, during the second phase through which patients with large residuals usually pass following preliminary drainage. It is during this stage that the change in blood pressure, the lowered pthalein output, the marked decrease

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in urinary output, the increased albuminuria and other evidences of acute congestion of the kidneys, manifest themselves, and yet, it is at this critical time that an added load is thrown upon the kidney by the second operation. Were this second phase following drainage per urethram or via the suprapubic route of equal duration in all patients, and were the condition of the cardio-vascular system of no moment, it would be an easy task to formulate a routine by which in a given number of days following the institution of drainage, the prostate could be enucleated. The stabilization of the kidney function, or its improvement, varies to such an extent that individualization is essential to success. The second stage has been successfully done within two weeks after the institution of drainage; on the other hand, we have waited two years, while in other cases catheterization or suprapubic drainage has been the limit beyond which it were unwise to venture.

The tendency of today, to drain per urethram, instead of by suprapubic cystostomy, finds application in a large number of cases, and is preferable for economic, and at times psychic reasons, provided proper attention to drainage and irrigation can be given by competent internes or by the surgeon himself, and provided that complicating conditions such as calculus, tumor, diverticulum, or marked cystitis with irritability of the bladder, be eliminated. To determine this, the cystoscope is invaluable and should be used except in cases known to react unkindly to instrumentation, or in patients who are very septic and feeble. In patients prone to epididymitis, the cystoscope as well as the catheter should be avoided. A suprapubic cystostomy is much safer and will permit of exploration for complicating conditions as well as for the type of obstruction present.

Whether decompression of the kidneys be brought about by the catheter or by cystostomy, this decompression should be gradual and so regulated that the kidneys readjust themselves to the new conditions with little or no evidence of disturbance. A clamp or stopper which permits of increasingly larger amounts of urine to be withdrawn periodically until continuous drainage is established, will suffice. In the event of a suprapubic cystostomy, the proper closure of the bladder around the catheter will insure against unintentional emptying and too rapid decompression.

During the period of continuous drainage, elimination should be promoted by forced fluids, diuretics and cardiac stimulants, although with improved renal function the cardio-vascular condition is ameliorated. Should it be necessary, a thorough digitalization is effected by giving large doses of digitalis for two days before the second stage. We have found the results better than by giving small doses over a long period.

It is also during this period of drainage and preparation that attention should be paid to the patient's habits. Constipation should be corrected, the diet and the exercise should be about normal and if alcoholic stimulants have been used we do not withdraw them. To permit of the patient's getting around and deriving the benefit of mild exercise we avoid any complicated appliance for the establishment of drainage and rely entirely on the proper closure of the bladder if a cystostomy has been done.

It is now our routine practice to estimate the pthalein output, to examine the blood for retention products, to note the blood pressure at frequent intervals, and to estimate the resiliency of the kidneys by taking the specific gravity of a 24 hour specimen when the patient is on a dry diet with a limited intake of fluids, and comparing it with the specific gravity of a 24 hour specimen when the patient is on forced fluids. We feel, in the latter test, that a patient whose specific gravity does not vary appreciably under the conditions imposed, is one whose kidneys are working at maximum capacity and unable to stand an ex-

tra tax such as might result following prostatectomy. Such a patient is always a more hazardous risk even though the pthalein and blood chemistry indicate proper elimination.

In the matter of preparation the diagnosis of the type of obstruction and the choice of the anesthetic should be included. As a result of the former, the surgical attack will be determined before hand, and an enucleation done when indicated, while the punch or the cautery are used when applicable. A failure to recognize the pathology present is responsible for unsatisfactory results in many instances. In the matter of anesthetics, we are partial to spinal analgesia in patients with a blood pressure over 110. We use 1¼ grains of aposthesin to 1 c.c. of distilled water injected between the 1st and 2nd lumbar vertebrae. We feel that with this form of analgesia the danger of a pneumonia or a nephritis is lessened, while the ingestion of fluids is not interrupted by a post-operative nausea or vomiting.

The post-operative treatment of prostatics really begins with the pre-operative treatment, and must be kept in mind during operation. The lessening of shock and hemorrhage will depend largely on the expeditious and thorough manner, with the least trauma to surrounding strictures, with which prostatectomy is done. To lessen the risk of hemorrhage the coagulation time should be determined to detect a bleeder. In all cases some form of hemostasis provided at the time of operation should be resorted to. We prefer the Pilcher, Hagner or McKinn bag for this purpose. The bag may be removed with the large suprapubic drain in 48 hours without pain and without risk of hemorrhage.

We never use the gauze pack as the removal is painful and will at times tear up the prostatic bed giving rise to severe, and at times fatal, secondary hemorrhage.

On the removal of the bag and the large drainage tube a Pezzer catheter with a large flange is then used for suprapubic drainage until the wound has granulated snugly around it, usually in 10 or 15 days, at which time it is removed. It is not usually necessary to insert a catheter per urethram after the removal of the Pezzer, as many of the patients keep dry or leak only for a day or two. If a suprapubic fistula persists, there is either some obstruction in the lower urinary tract or an incomplete removal of the obstruction. It not infrequently happens that the incision in the bladder has been made too low. A high incision will close faster. Lumbar tabes may be responsible for lack of closure but this should have been eliminated before prostatectomy was done.

Should there be evidence of shock or renal insufficiency intravenous infusions of saline or of glucose and blood transfusions are valuable. It may even be advisable in some cases to transfuse one or more times before operation.

Hiccough is usually evidence of a toxemia and is of grave significance when due to renal insufficiency. For this reason the urinary output should be measured and recorded. This would preclude the early irrigation of the bladder to combat local infection. The tongue is a good index to the renal condition. A dry glazed tongue even before the appearance of hiccough is always a signal for increased efforts towards elimination; sweating, purgation, gastric lavage, and the administration of fluids by the route best tolerated should be practiced. On the other hand, the repeated administration of opiates for the relief of hiccough, whether due to renal insufficiency or to the other causes is to be condemned. The activity of the skin, the bowels, and the kidneys is decidedly hampered by their use. Hiccough will occur at times from the use of a general anesthetic, gas or ether, and may be distressing. It is usually not serious.

Paralytic ileus will occur in a few cases no matter what form of anesthesia is used. It is distressing and in the presence of serious myocardial degenerations may be ex-

tremely serious. Purgative enemata, gastric lavage, hot turpentine stupes, and surgical pituitrin may be used to overcome this complication.

Epididymitis occurs not infrequently following prostatectomy; some observers giving the incidence of its occurrence as high as 20 per cent. It is a serious complication usually occurring during the second or third week after operation when the patient is up and about. The sepsis resulting therefrom may be the deciding factor as to recovery. It certainly prolongs the convalescence, and prophylaxis by bilateral ligation of the vas should be routinely practiced. Should it occur, the usual treatment for epididymitis is to be employed. If the symptoms warrant it, epididymotomy should be done. Occasionally epididymitis will occur after the passing of a sound introduced to determine the possible contraction of the vesical neck or of the prostatic urethra. Although this is a rare result of prostatectomy, it is not unusual to have made an incomplete diagnosis and to have overlooked a contraction of the vesical neck which should have been corrected when the prostate was enucleated. Copious irrigation before, and the instillation of 1 per cent solution of nitrate of silver after passing the sound minimize the risk of epididymitis.

With a more generalized use of local, sacral and spinal analgesia the incidence of pneumonia has been somewhat diminished. It still claims its toll, however, as a factor in prostatic mortality. Hypostatic pneumonia and hypostatic congestion of the lungs are seen less often if the cardio-vascular system is watched carefully and if the position of the patient is changed frequently. Unless there be some contraindication the back rest may be used on the first day of operation, and the patients may be put in a rolling chair on the fourth.

In closing let me emphasize that the success of prostatic surgery depends on an accurate diagnosis, and on the most minute attention to details in the matter pre-operative and post-operative care.

DISCUSSION.

Dr. H. W. E. Walther (New Orleans): In 1921 Braasch and Kendall first called our attention to the difference in the results following the intravenous administration of phthalein for testing secretory functions of the kidneys as compared with the intramuscular test. Long before this I had adopted the intravenous methods and had noted its superiority. The readings from intramuscular administration are variable and untrustworthy. Intravenous test only should be employed.

In 1925 Shaw reported very interesting observations on 15 and 30 minute phthalein readings. This observation I consider the most important piece of research since Rowntree and Geraghty gave us phthalein in 1910. Shaw found, in normal kidneys, that one would obtain:

40% of the dye in the first 15 minutes
17% of the dye in the second 15 minutes
8% of the dye in the third 15 minutes
4% of the dye in the fourth 15 minutes

making a total one hour collection of 69 per cent as average. Unless one has done the test this way, he does not know that he can get all necessary data from a one hour phthalein reading instead of doing a two hours collection. In my service at the Baptist Hospital we have adopted thirty minutes readings—either for one or for two hours—and the same ratio holds as pointed out by Shaw. In good kidneys we get:

50% phthalein for first 30 minutes
15% phthalein for second 30 minutes
10% phthalein for third 30 minutes
5% phthalein for fourth 30 minutes

making a total of 80 per cent for two hours, or 65 per cent for one hour. In reverse ratio, with poor kidney function cases we have noted commonly such readings as:

5% phthalein for first 30 minutes
10% phthalein for second 30 minutes
15% phthalein for third 30 minutes
20% phthalein for fourth 30 minutes

a total of 15 per cent for one hour, or 50 per cent for two hours. In good surgical risks for prostatectomy the maximum amount of dye should be excreted in the first half hour. When the initial collection is low, the renal function is below par and one should proceed cautiously. The one hour phthalein is a time-saver and should be more widely adopted.

The anesthesia factor unquestionably has an important bearing upon post-operative care and results. The personal equation of the surgeon as to whether it is to be local, spinal, sacral, caudal or general will forever remain an individual matter. Nevertheless I feel that more serious thought should be given this matter by the general surgeon. In our work we have adopted local for the first stage and ethylene-oxygen for the second stage, with excellent results and no mortality since the abandonment of ether.

Dr. Kahle mentioned the McKim bag. I am sure every up-to-date urologist has adopted some type of bag to arrest hemorrhage so that this complication following the removal of prostates is a thing of the past. At the Baptist Hospital we have installed water suction pump drainage, with the Lowsley apparatus, and all our suprapubics remain perfectly dry throughout their stay in the hospital.

One more matter and I am through. Gastro-intestinal complications following prostatectomy give me personally more trouble than any other post-operative train of symptoms. I have wondered if others have had the same experience? The prompt employment of the duodenal tube with lavage, pituitrin by needle, hot turpentine stupes, and last but by no means least, blood transfusions, will help these patients when nothing else will.

Dr. E. K. Hirsch (Baton Rouge, La.): There are just one or two things I would like to say. I think the greatest fault we have to find in many men doing prostatic work is that they set a certain time limit between the first and second stage, operation, which Dr. Kahle has called attention to, and the period of six days or six weeks has absolutely nothing to do with it. Among other things, the stabilization of the kidney and other functions is most important.

Another thing I have seen recently in the literature, and which happened to me in one of the best risks I ever had, was a rapid uremic death, death occurring in seventy-two hours in a patient who apparently was as excellent a risk for prostatectomy as I ever had. Yet, in the mention of these facts, there is no accompanying information as to its possible prevention. As I know nothing of the prevention in such cases I would like Dr. Kahle to explain the reason as well as the treatment.

Dr. P. Jorda Kahle (closing): I appreciate the supplementary paper by Dr. Walther.

There is no doubt that the reading of phthalein is often misleading. A two hour reading is less significant if patients are suffering from retention of urine, and I feel that the low output during the first hour is evidence of a lack of decompression of the kidney. It is common to find patients with large residuals with a good two hour output, but the output for the first hour is consdierably less than that during the second hour. There is nothing new in this observation, as it was mentioned by Rowntree and Geraghty at the time that they published their report on phthalein.

We are in the habit of giving phthalein intravenously and intramuscularly, but at different sittings, as we feel that the intravenous injection gives us information concerning the secretory power of the kidney, whereas the intramuscular injection may give us a hint as to faulty metabolism, as well as of the functions of the kidney.

In reference to Dr. Hirsch's case, I believe that this happens to all of us, no matter what type of surgery we are doing—we have a calamity out of a clear sky. I know of nothing that can be done to avoid it, nor of measuring the reserve power of the patient's kidneys. We have patients whose blood chemistry is apparently good, the blood urea content is not markedly above normal, and the phenolsulphonephthalein is sufficient, and at the time of doing these tests the kidneys are doing good work. This fact was brought forcibly to my attention in Philadelphia, thirteen or fourteen years ago, when Lewis was advocating in the course of routine examination of the kidneys what he called the specific gravity test. By this test I believe that some information is given as to the resiliency in the kidney. This specific gravity of a twenty-four hour specimen is taken with the patient on forced fluids, another twenty-four hour specimen is taken with the patient on a dry diet. The specific gravity of both are compared. If the kidney is working at top speed the specific gravity of the two specimens are going to vary very little. If the kidneys can adapt itself to the load thrown upon it, if it is resilient or has reserve power, the specific gravity will vary decidedly. I always feel safer after having done the specific gravity test, as I believe that it gives information that we do not get from any of the other tests. The other tests of renal function show that the kidneys are doing good work, but they do not show whether the kidneys are carrying the maximum load.

THE DETERMINATION OF CERTAIN TUBAL PATHOLOGY BY THE INJECTION OF LIPIODOL.

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AND

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NEW ORLEANS.

There is no question but that the cause of a very large percentage of all cases of sterility lies in the condition of the Fallopian tubes, and up to quite recently the Fallopian tubes, except at operation, have been a sealed book. Many women have been operated upon needlessly, therefore, for conditions which were frankly hopeless, and others have been refused operation who perhaps might have been helped. In this connection it is well to remember that although sterility is not vital in the sense that it threatens life, it is vital in the sense that it affects the happiness of the individual and of the family, and that ultimately it affects the welfare of society. Moreover, if we are to judge from the statements of gynecologists to the effect that an increasingly large proportion of their practice is made up of women who desire children and are barren, it is evident that the already relatively large percentage of childless unions is apparently increasing.

Sterility in the presence of gross tubal disease presents no diagnostic difficulties, but the situation is different when there are no clinical signs of pathology of this kind, when every apparent cause for the sterility can be eliminated, and yet the woman does not conceive. In such instances the tubes should always be suspected, but until quite recently there has been no way of proving the responsibility, short of opening the abdomen, a procedure not, in our opinion, warranted on mere supposition.

For the last ten or twelve years repeated endeavors have been made to study the condition of the Fallopian tubes in this type of case, with a view to the determination of when operation was justified and when it was not. The Rubin insufflation test was the first really practical diagnostic measure devised, and yet even it has decided disadvantages. If only the stethoscope be employed to detect the presence of air in the peritoneal cavity, the personal equation enters in too largely to make the results thoroughly satisfactory from a scientific point of view. One of us (Miller) has many times been uncertain as to whether the air which was heard was really in the peritoneal cavity, or was merely a leak from the cannula in the cervix. Moreover, even when roentgenology is resorted to additionally, the only information secured is that the tubes are patent or that they are not. There is no information, in occluded tubes, as to the location of the obstruction, which is decidedly the most important point in deciding whether or not surgery is justified.

Various solutions have been employed at different times to visualize the tubes, but all of them have been unsatisfactory, either from the radiologic standpoint, or from the standpoint of the patient's welfare. In lipiodol, however, the ideal agent seems to have been found. This, briefly, is a solution of 40 per cent iodin in poppyseed oil, so compounded organically that no chemical process has yet been evolved which is able to disintegrate it when once union has occurred. It was introduced by Sicard and Forestier in 1922, first as a means of demonstrating tumors of the spinal cord, and later as a means of demonstrating other forms of pathology elsewhere in the body. For some time it has been employed in pelvic work on the Continent, but this particular use is fairly recent in American clinics. It should be added that lipiodol is an absolutely non-irritating substance, without any tissue reaction following its use, and that the literature, so far as we are aware, recounts only one fatality following its injection. This was a brain abscess,

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reported in the five thousand cases of Sicard and Forestier.

The technique is simple, and hospitalization is not necessary. The patient is placed in the lithotomy position, the vagina is swabbed out, and the cervix is touched with tincture of iodin. The lipiodol is then injected through a laryngeal cannula applied in the cervix, from a Luer syringe. A rubber cork fits over the cannula, some two inches from the tip, and acts as a plug at the external os, so that leakage is reduced to a minimum. The cannula is of copper, and is so small and malleable that we have never encountered any difficulty in inserting it even into a nulliparous cervix or through a tortuous canal. The solution, of which not more than five or six c.c. is needed, should be injected very gradually.

The picture made immediately after the injection usually shows the uterus and tubes well outlined, and, if the latter are patent, lipiodol will already be dripping from the fimbrited extremities. Another picture made twenty-four hours later determines whether or not the solution has escaped into the peritoneal cavity, and definitely settles the question of whether or not the tubes are entirely or partially occluded.

Fluoroscopic examination, whenever practical, is done simultaneously with the injection of the lipiodol. In normal, healthy tubes peristaltic waves are clearly seen, beginning at the fimbria and passing towards the fundus, usually occurring about fifteen seconds apart and one at a time, though sometimes two may be observed simultaneously. This consideration is a highly important one. It is easy to see how disturbed peristalsis, even in a patent tube, might result in the death of the fertilized ovum before uterine implantation could occur.

It might be well to mention briefly the surgery possible for the relief of closed tubes. It is axiomatic that the further the obstruction is from the fimbriated extremity, the smaller is the hope of success, and I personally (Miller) am decidedly opposed to promiscuous salpingostomies. In a young woman, however, when the obstruction is at or near the fimbriated end, if there is no other apparent bar to conception and if she is willing to take the admittedly small chance which the procedure offers her, operation is certainly justified. It is justified, too, in those cases in which the obstruction is apparently due to the kinking of the tubes from peritubal adhesions. Further than this we are not prepared to go. We do believe, however, that if this test does nothing more than to prove definitely to the unhappy women who now haunt gynecologists' offices that they can never hope to become pregnant, it is well worth while. It is conceivable, too, that with a more scientific study of tubal conditions in the living, which this type of test makes possible, more intelligent modes of treatment may be devised than exist at present.

This paper is a purely preliminary report of a study which was undertaken by us jointly the first of this year, and which we hope to continue over a considerable period. For the future it will be concentrated largely on the problem of sterility. The present report, however, is based on approximately forty cases representing all types of tubal pathology, both gross and obscure. From it the following points emerge:

1. Lipiodol injections through the cervix clearly outline the uterus and Fallopian tubes, as is evident from the plates herewith exhibited. Not only is every type of tubal distortion and obstruction demonstrated, but also tumors and polypi of the uterine cavity, distortions and displacements, and even, in one instance, a polypoid endometritis, as evidenced by definite, grape-like protrusions from the endometrium.

2. Three of these cases were studied prior to operation, and at operation the

roentgen-ray findings were entirely confirmed.

3. Every type of case, including several pus tubes, has been injected without any ill effect. For this reason we see little basis for the contention of Rubin that the lipiodol test should be used only when the tubes have been proved by a previous air insufflation to be definitely stenosed or actually closed, so that none of the solution may escape into the peritoneal cavity.

4. Like the Rubin test, the lipiodol test probably has some therapeutic value in that it may occasionally straighten out kinked tubes or dislodge mucous plugs, but its practical value is, in our opinion, purely diagnostic. Likewise we are not yet prepared to say that the injection has a real therapeutic effect in cases of acute pelvic inflammation, though we are aware that such results have been reported in chest work.

In conclusion, it is well to emphasize the fact that no test of this sort is justified until the husband has been found virile, and until a routine general and special study has eliminated other possible causes of the sterility.

NOTE—Our thanks are due for the assistance rendered us in this work by the members of the Roentgen-ray Department of Touro Infirmary, particularly Dr. F. Y. Durrance and Dr. John A. Rodick.

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DISCUSSION.

Dr. John F. Dicks (New Orleans): The use of lipidol to test the patency of the Fallopian tubes is undoubtedly a distinct improvement over the old Rubin test. I have been using it for several months and find it satisfactory.

A point that should be stressed is the importance of the twenty-four hour plate, for without this second study you cannot be positive that lipiodol has passed through the tube. In other words, there is an element of error in one plate because lipiodol may be seen in the tube as far as the fimbria, yet the fimbria may be occluded. However, if a twenty-four hour picture is made and lipiodol can be seen free in the pelvis below the ends of the tube then you can assure your patient that the tube or tubes are patulous.

I don't know how Dr. Miller feels about the twenty-four hour plate but I am never satisfied unless my diagnosis is confirmed in this way.

Dr. Walter J. Otis (New Orleans): Do you produce any reaction to suggest irritation from this injection of lipiodol? Have you ever seen a case with symptoms following the test, or read of a case where this oil produced an irritating effect?

Dr. C. C. Bass (New Orleans): I would like to know whether lipiodol is an antiseptic, also whether it distributes bacteria; that is, whether with the diffusion of the oil bacteria might not be carried into the tubes at the same time? This seems very probable.

Dr. H. E. Miller (closing): In answer to Dr. Bass's question about the antiseptic value of lipiodol, it is still a debatable question. Several of the men who have experimented with lipiodol in chest conditions have claimed that the iodin content of the solution had some antiseptic qualities.

The peristalsis in the tubes which has been observed with the fluoroscope begins at the fimbriated extremity and passes on down to the fundus of the uterus about fifteen seconds apart and only one wave occurs. A second wave, however, is occasionally seen.

The plate made twenty-four hours after the injection of the lipiodol is particularly necessary, inasmuch as it is not always possible to find the lipiodol out of the tubes and into the abdominal cavity immediately after the injection.

Personally, I think more of the lipiodol test than that of Rubin, as it gives a definite picture of the tubes and positive proof of the material being extruded through the fimbriated end. We have not found that the injection of lipiodol has given any pain as very little force is used in injecting the solution into the uterine cavity, the remarkable diffusibility of the solution causing it to enter the tubes and abdomen without much pressure being exerted.

TOXIC DIARRHEAS OF PARENTERAL ORIGIN.*

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LAKE CHARLES, LA.

The subject of this paper is pertinent alike to the general practitioner and pediatrician. The conclusions presented are not all new, neither are they all old. I have tried to arrange the matter so that a distinction may be drawn in the different etiology as well as in the different treatment indicated.

It appears from casual observation that the average family physician is not impressed with the importance of distinguishing between diarrheas of parenteral origin and other types of diarrhea. As a general practitioner a few years ago, I could not believe that the entero-colitis of infants and children may have its cause remote from the gastro-intestinal tract, and dependent for its existence on this obscure pathology.

The "first and second summer" diarrheas of infants of a decade ago, have abdicated in favor of the "first and second winter" diarrheas, because acute upper respiratory infection with its complications is now the most frequent cause of diarrhea.

Diarrhea is only a symptom of many diseases, and is a result of the influence of toxins on the intestinal mucosa; these toxins may be generated in the alimentary canal by drugs, improper food and bacteria, or the toxin may be elaborated elsewhere resulting in a toxemia, and thereby affecting the intestinal lining and alimentary glands in producing an abnormal secretion. It is the latter phenomena we wish to discuss. As parenteral, therefore, we mean all causes originating outside the stomach, intestines and their glands.

Diarrheas of parenteral origin are apt to be preceded by fever and vomiting, whereas diarrheas of enteral origin are not. In the latter there is frequently no vomiting at all. Parenteral diarrheas are usually not as serious as those due to improper feeding, and often no modification of the feeding is indicated in the treatment.

Parenteral causes of toxic diarrhea will again be divided into three groups, viz.:

Group (1) of acute infections:

(A) Obscure,

- Pneumonia.
- Pulmonary abscess.
- Meningitis.
- Pyelitis.
- Otitis media.
- Mastoiditis.
- Naso-pharyngitis.
- Osteo-myelitis.

(B) Evident,

- Pneumonia.
- Pyelitis.
- Stomatitis.
- Furunculosis.
- Acute infectious fevers.
- Acute tonsillitis.
- Empyema.

Group (2) of chronic focal infections:

- Chronic pyelitis.
- Chronic tonsillitis and adenoiditis.
- Chronic parnasal sinusitis.
- Chronic alveolar abscess.
- Chronic mastoditis.
- Chronic otitis media.

Group (3) of other causes:

- Drugs.
- Over clothing.
- Fevers in general.
- Starvation diet.
- Sprue.
- Celiac disease.
- Uremia.
- Obscure causes.

GROUP (1) ACUTE INFECTIONS.

The baby or preschool child suddenly becomes ill, its temperature rises to 102 or more, there is vomiting, bounding pulse, perhaps delirium, the child appears very ill. There may be pain in the abdomen and a good deal of flatulence, and by the time the medical man arrives there will be a diarrhea. This will be a typical watery diarrhea, and large quantities of water may be lost within a few hours.

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How many of us, in such cases, without a real examination, conclude that the child has eaten something which has made him sick, write a prescription for calomel and castor oil, and promise to call again next day? A more grave mistake could not be made; a pneumonia may be present, a bulging ear drum, an acute tonsillitis, meningitis or pyelitis. At another visit when the correct diagnosis has been made by the consultant or family, we declare, "It has run into this or that, or so and so," to save our skins!

The symptoms outlined above demand a thorough examination of the chest, throat, ears, limbs, central nervous system, blood and urine, and if all of these be found negative, you still have no right to assume that the trouble originated in the gastro-intestinal tract, even if there is excessive vomiting and diarrhea. By persistence and thoroughness in your examinations you will locate the real trouble far removed from the enteral canal in almost 99 per cent of the cases. The blood picture in these cases is essentially that of the primary pathology, plus concentration.

These diarrheas may persist long after the causative factor has cleared up, on account of changes in the infant's diet, as the good (?) neighbor will advise a change from breast milk to condensed milk.

The prophylaxis of this form of diarrhea lies in proper hygiene, avoiding crowds and attention to colds and other infections.

The treatment should be toward the underlying cause of the diarrhea, but the diarrhea as a symptom will call for immediate attention also, as the water loss and starvation can promptly make angels of babies.

Marriott's classical picture of these extreme cases fits too well to be omitted here. "A small infant may lose a half pound or a pound in a single day, the loss is chiefly water; coincident with the loss of weight, the appearance of the patient changes greatly. The features become sharpened, the eyes sunken and often fixed in a far-away stare. Later the conjunctivae lose their luster and are coated with a lusterless film. The eyes are likely to be turned up under the half-closed lids, the fontanelle is depressed, the skin has a peculiar pallor and often a characteristic grayish color like that of wet ashes," etc.

I will make no effort to detail treatment in these extreme cases of athrepsia or anhydremia or both. The intravenous administration of 10 per cent to 20 per cent glucose (20 cc. per kilo of body weight) with insulin may be used, and it may be repeated at eight hour intervals as indicated. Intra-peritoneal Ringer's solution, 500 cc. to 700 cc. repeated as necessary, may also be used. Many patients respond only after a blood transfusion is given. All food may be withheld from 6 to 24 hours, depending on the condition of the patient, and this includes breast-fed babies.

Skimmed lactic milk has been my best friend in these cases, though others prefer some of the dried milk formulae or protein milk. Cereal waters are sometimes more easily retained than plain water, but cereal water is no substitute for food.

In mild cases the skimmed lactic milk diet may be all that is necessary to correct the diarrhea. The only drug of service in treating this symptom is an opiate, and usually this is paregoric if there be little vomiting, or codein by needle if there be excessive vomiting, but under no circumstances should a cathartic be given. Abt aptly remarks in commenting on this question: "The marvel is that certain members of the profession continue to treat diarrhea by causing more diarrhea and intestinal irritation. Fortunate is the child who recovers from such treatment." The various bismuth salts rarely measure up to expectations unless given in enormous doses, and then they are poisonous. Of course other drugs may be indicated in treating the underlying condition.

GROUP (2) CHRONIC FOCAL INFECTIONS.

This is the paroxysmal diarrhea of childhood, the result of chronic focal infection. These cases occur in older children than the preceding, rarely in babies. There is a history of its beginning as early as two years of age, or as late as six or more. It occurs at intervals of two or three weeks to two or three months.

These children frequently present the typical adenoid faces, they are nervous and easily excited, they are choreic, undernourished and have sporadic appetites. They often complain of pain in the extremities, especially in the lower limbs. Occasionally a victim is seen who is apt at school work, but the majority of them are more or less mediocre. These children are always complaining of being tired.

These outbursts of gastro-intestinal storms can not be attributed to errors in diet, as they will occur when the patient is on the strictest diet. The attacks run their course over a period of three to eight days but are influenced in their severity by treatment.

On close examination there may be found a "flare up" of the focus of infection, but this may be slight and easily overlooked.

The small submerged tonsil with its "satellites" (adenoids), is the most common offender in this group.

The blood picture between the paroxysms will be normal, during the attack there will be a leukocytosis. The stools are at all times negative for specific organisms.

The child will complain of headache, there will be fever, there is apt to be vomiting, the patient will be constipated at first, there will be a great deal of gas in the abdomen. (This gas will be present also between the paroxysms.) The child may complain of sore throat and the pharynx will be found congested. In a day or two there will be mucous stools, three to eight daily, usually not much tenesmus. There may be occult blood in the stools, microscopically there is constantly found blood, pus, bacteria and undigested food particles. Colic is usually associated with this form. The toxemia will cause convulsions in some patients.

The prophylaxis consists in the elimination of all focal infections. The treatment consists in putting the patient on a liquid diet. Argyrol 1 to 300 in milk or water should be used, this dilution prohibits growth of the intestinal bacteria. Enemas of a saturated solution of magnesium sulphate two or three times daily will help to dispell the accumulated gas, keep down the tenesmus and contribute to the comfort of the patient. If there be much colic, opiates should be used. Sponging and ice may be indicated. The symptoms will clear up in a few days on this regime. In convalescence the patient will appear a great deal more emaciated and depressed than the few days illness would warrant.

If the focal infection suggests medical treatment it may be started at once, but if it is surgical, one should wait until the acute abdominal symptoms have subsided. Between the paroxysms the tonsils and adenoids should be removed, or the sinus drained, etc.

The traumatism incident to a tonsillectomy may, in some patients, be sufficient to introduce a new attack which will run a typical course.

GROUP (3) OTHER CAUSES.

This group includes all parenteral causes not included in the first two groups. In the outline above the most important of these have been mentioned.

I will not take the time to enumerate the various causes, or outline the treatment of the responsible conditions; but they are included in this paper for the purpose of being considered in differentiating in the etiology of the symptom under discussion. The diarrhea will necessitate treatment, but primarily the cause should be ascertained and eliminated as quickly as possible.

If, in writing this paper, I shall cause one man to think before he writes his calomel and castor oil prescription, and thinking, desist in writing them, and instead make a careful examination of his patient with a determination to discover the real pathology and thereby give rational and reasonable therapy, I will have been well repaid for the effort put forth.

SUMMARY.

Toxic diarrheas of parenteral origin are discussed. Three groups are recognized: (1) Those accompaning acute infections. (2) Those of chronic focal infections, and, (3) those of all other causes.

Group (1) frequently demands prompt, and sometimes heroic treatment as supportive measures; cathartics are strictly contra-indicated.

Group (2) is usually self-limited and the cure is obtained by eradicating focal infection.

Group (3) consists of all other causes of parenteral origin, several entities are mentioned but no attempt is made to outline special treatment for the different conditions responsible.

DISCUSSION.

Dr. E. J. Cather (Oakdale): Mr. President, I do not feel that a good paper like this should go by without somebody commenting on it. I only want to express my approval of every word said in this paper, and looking back on my past record I wonder how in the world so many of my babies ever got well with the old treatment we used to give a good many years ago. We used to think that every case of diarrhea was due to some intestinal infection. We soon found out that we always have a diarrhea with most any infection in respiratory tract or ears or brain and everything else.

A good while ago I heard the late Dr. Howland of Baltimore read a paper, and I think if there is any one thing that has ever given me more anxiety than any other, it is the diarrhea of babies, and when he read his paper on diarrhea, he didn't prescribe any medicine. I wanted to be real sure about that and I called him up and said, "Don't you give any medicine at all?"

He said: "Didn't you hear my paper?"

"Yes," I said, "but there are cases where you have a water discharge every few minutes. What are you going to do about that?"

"Oh," he said, "you might give a little paregoric after each action if there are more than twelve actions in twenty-four hours."

That helped me a little bit with the medicine that I have been giving, but if we leave these babis alone and stop feeding them for twelve or twenty-four hours, and if you can get fluids down by mouth or rectum, get them in some way and leave them alone, they will get well.

I was very glad to hear the doctors paper. I think the mothers for generations have been fed up on medicine, and if you go to see the baby and don't give it some medicine, they think the doctor hasn't done his duty and they want to change doctors. I have just gotten into the habit of letting them change if they want to. If they want to give them calomel and castor oil, let them go ahead. They will be sorry after the baby has died. I can hear about it. For generations the laity has thought that you have to give them calomel and castor oil and that is the first thing they do in these diarrheas. It is going to be a hard thing to educate the people that they don't have to have some purgative right away, because they have been taught that so long.

I want just to say that I enjoyed Dr. Crawford's paper and I think if we can just preach to every mother to leave the baby alone and be satisfied not to give them the medicine, we will save a lot more babies.

Dr. Crawford (closing): I don't think I have anything further to add. I was anticipating a little discussion on the second group—that caused by chronic focal infection. I have seen quite a number of these cases and I am sure you gentlemen have. Sometimes it is rather confusing. These cases will go along and you are rather inclined to believe that you have a specific intestinal infection, but by repeated examination of the stools, I think you will find no specific organism present.

REVIEWS

HYPERTENSION IN CHRONIC NEPHRITIS: A REVIEW.

K. N. RAYER, M. D.,

NEW ORLEANS.

For almost a century, clinicians have recognized a peculiar combination of phenomena known as the cardio-vascular-renal syndrome—a name given to an association of a high blood pressure and cardiac hypertrophy with chronic nephritis. It was Richard Bright, in 1836, who first called attention to this symptom complex, and who made the first attempt to correlate the elements of the clinical picture on the basis of pathological physiology. Since that time a vast amount of experimental work has been done toward the end of establishing the etiological inter-relationship of each of the three elements—blood pressure, vascular system, and kidneys.

In outlining the problems which lead to a study of these factors, there are three fundamental questions to be considered: Is the hypertension the primary condition, giving rise later to the kidney changes, or is the nephritis the antecedent disease and the elevated blood pressure a compensatory result? If the hypertension is the initial pathological change, what brings it about, and why should it be followed by the development of a nephritis? If the kidney disease be the first to appear, how are the subsequent vascular disorders to be explained?

An intelligent study of this problem demands at the outset a precise understanding of the minute structure of the kidney and of its vascular relationships. To this end it will be well to recall briefly the essential anatomy of the normal organ.

The ultimate functioning element of the kidney is the renal corpuscle, which consists of a spherical tuft of capillary vessels, the glomerulus, which is invaginated into the end of the uriniferous tubule, and thus comes to be enveloped by a double layer of flattened epithelial cells known as the glomerular capsule of Bowman. This capsule opens through a narrow neck into the long and tortuous uriniferous tubule, which, after leaving the cortex, enters the medulla, loops upon itself, and re-enters the cortex to join the successively larger collecting tubules leading into the papillary ducts and finally into the calices. It is to be noted that all of the renal corpuscles lie in the cortex of the kidney, and that the medulla is composed of the uriniferous tubules and their surrounding capillaries.

The kidney receives its blood supply from the renal arteries, which, as they enter the hilum, divide into two sets of principal branches, the interlobular arteries. These vessels immediately course toward the capsule of the organ, lying in the connective tissue between the lobules of the medulla. When they reach the line of junction of the cortex with the medulla, they divide again, each branch passing horizontally in an arched manner along the bases of the pyramids at the outer margin of the cortex, giving off branches which on the one side pass down into the substance of the medulla to form a rich capillary plexus around the uriniferous tubules, and on the other hand, branches enter the cortex and pass toward the outer surface of the kidney, to become the afferent arterioles of the renal corpuscles. Within the corpuscle this afferent vessel breaks up into a mass of convoluted capillaries which form the glomerulus, and which re-unite as the efferent vessel. This latter, after leaving the corpuscle, promptly breaks into a second capillary plexus around the adjacent uriniferous tubules of the cortex—a point which is often misunderstood. These vessels then lead into the smallest venules, which grow in size as more tributaries are added, until they have formed the interlobular veins, whose course parallels that described for the arteries. It is to be noted in considering the vascular supply of the kidney that in addition to the arterioles

which supply the glomeruli, there is a vast number of capillaries occupying the interstitial tissue surrounding the uriniferous tubules of both the cortex and medulla, an anatomical arrangement providing for the longest possible blood path, together with a double system of capillaries. It has been stated that from ten to nineteen times more blood passes through the two kidneys in a given time then through all of the other organs of the body combined, and that during diuresis, as much as ten percent of the total blood volume may be contained in the kidneys.

It was this fact of the tremendous vascularity of the kidney which led the earlier observers to conclude that the rise in blood pressure observed in cases of chronic nephritis was due to the obliteration of this great capillary bed by the fibrosis and shrinking of the kidney substance (Traube). They assumed that the gradual elimination of so great an area of the vascular system must necessarily raise the pressure, if the blood volume were to remain the same, and the space in which it was confined were to be made smaller. This conception of the mechanism was certainly simple, and apparently logical, but was very soon shown to be entirely erroneous when it was discovered that ligation of both renal arteries does not raise the general blood pressure. Obviously, then, the mere elimination of a great area of the vascular bed, despite its size, is not the factor concerned here. The general vascular system is apparently capable of accommodating itself to the new situation of a reduction in its capacity without a rise in pressure.

In a further attempt to solve the problem, the idea was hit upon that with the gradual destruction of parenchymatous kidney substance in interstitial nephritis, more blood must pass through those glomeruli which yet remained functional, in order to maintain urine secretion, and thus to preserve life. It was said that "Nature" accomplishes this end by raising the pressure in the general systemic bed, and thus increasing that in the renal artery. Renal elimination must be maintained at any cost, and the cost is a high one. Today the opinion is that this conception is in great part correct—that is, the hypertension is considered to be somewhat a compensatory measure, although it is now proven that in the hypertension of chronic interstitial nephritis, neither the minute volume, rate of flow, or systolic output is increased, and that it is rather an increase in the pulse pressure which is effective in promoting increased diuresis than an elevation of systolic pressure.

If we go no further, however, than to say that "Nature" accomplishes this purpose, we have merely evaded the issue and stated a fact that is perfectly obvious. Of course, "Nature" does everything in the final analysis. What we must know is how and why the reaction comes about—what is the actual mechanism concerned, and what structural or chemical change initiates the process. When the problem is approached from this angle, it is apparent that the desirable case for study is not the one with advanced kidney disease and a heart hypertrophied to twice its normal size, but rather the condition in its incipiency—where the normal physiology is just giving way to pathology.

Jaffee has been able to select several such early cases, and finds in them an important clue as to what is probably the first factor concerned in the development of this cardio-vascular-renal syndrome. In making microscopic studies of the kidney in these early cases of hypertension, where no signs of kidney disease had yet become evident clinically, he found a slight dilatation of many of the afferent vessels of the glomeruli, beginning in the short intraglomerular portion of the vessels and gradually affecting the entire arteriole. In the earliest stage this distension of the afferent vessels was the only change noted, and it is peculiarly significant in that it indicates not only a disturbance in the renal circula-

tion, but it points to a certain place where the primary disturbance may arise.

What accounts for this afferent vessel dilatation? We must assume that a constriction has occurred at some point distal to the dilated area, and the only place this can possibly be is in the glomerular tuft of capillaries. Upon examination of these capillaries, there are seen irregularities in their blood content, with evidence of capillary spasm and ischemia of the glomeruli. Now the process has been traced a step further—how is this capillary spasm to be explained? Krough has shown that there are contractile cells on the walls of the capillaries which have long fibril-like processes, grasping the vessels like the tentacles of an octopus. These fibrils are so arranged that contraction will completely close the capillary, and the cells themselves are not only under the control of the vasomotor system, but also seem to be susceptible to the influence of certain substances passing through the capillaries, and expand or contract as they are relaxed or stimulated (Warfield). Their contraction, therefore, brings about the glomerular ischemia, and provides a point of obstruction in the glomerulus sufficient to account for the slight rise of pressure in the vascular system leading up to the glomerulus, and the consequent dilatation of the afferent arteriole.

It is to be particularly noted that in these earliest cases, there are no actual organic changes whatever, either in the kidney or its blood vessels. If this ischemia of the capillaries continues, however, degenerative changes are to be expected to occur in their walls, and in the structures which depend upon them for nutrition. And these degenerations are seen somewhat later in a hyalinisation of the walls of the glomerular capillaries.

But in the attempt to discover what it is that brings about this contraction of the capillaries we must look back still further. Here we leave the field of anatomy and turn to physiology, and when we do so it is found that only one fact is reasonably established—that the capillaries are stimulated to contract by some irritant acting from within their own blood content. The exact nature of this irritant has not yet been determined. There is considerable evidence to indicate that certain end-products of protein metabolism may be responsible, and that high protein diets may have an influence in initiating the process. Guanidin and high uric acid concentrations have been shown to be injurious to vessel walls. Perhaps toxins from common micro-organisms may be the stimulating element. From the present evidence it would appear that this factor is not always the same in all cases, but that whatever be the nature of the irritant, its end results on the glomerular capillaries are essentially identical.

Besides this action of an irritant from within upon the capillary walls, Elwyn Herman suggests that the angiospasm may be a vaso-motor phenomenon. It is known that the normal control of the blood flow to the glomeruli is brought about through sympathetic nerves which have their origin in the renal ganglion, which lies in the connective tissue at the hilum, and that the vaso-constrictor fibers for the renal vessels are to be found in the thoraco-lumbar outflow of the sympathetic system in the roots of the spinal nerves from the fourth dorsal to the fourth lumbar, while the skin and cutaneous vessels are supplied from the same outflow. Exposure to cold, for instance, has as its first effect a reflex vaso-constriction not only in the skin, but of the kidney vessels, leading to a diminution in the amount of urine. At the same time there is an elevation of systemic blood pressure due to a reflex vaso-constriction in the splanchnic area, by way of the same sympathetic nerve outflow. Reasoning by analogy, why can it not be assumed that this early glomerular ischemia, brought about by some chemical irritant, likewise causes a reflex splanchnic vaso-constriction

by the same mechanism, and thus account for the very earliest rise in systemic blood pressure?

As soon as the glomerular ischemia becomes marked, there is a diminution in the amount of glomerular filtration and a consequent change in the blood composition and volume due to the beginning retention of the nitrogenous products of metabolism. A new mechanism may come into play, in addition to the splanchnic vaso-constriction, which attempts to overcome the glomerular angiospasm—that is, the development or liberation of certain pressor substances which tend to bring about an elevation of the systemic blood pressure. Volhard assumes that the same reflex which causes vasoconstriction in the splanchnic area must also stimulate an increase in the production of adrenalin. The inability to find an excess of adrenalin in the blood in such cases is not against the idea, since it is undoubtedly continually used up at the site of its activity. There is no agreement, however, as to the exact nature of this pressor substance, whether it be adrenalin or not, but it is quite certain that some such element is developed and liberated.

It has been stated that this functional angiospasm in the glomeruli is at first a spasmodic and relatively intermittant condition, but that if the vessels remain contracted for any length of time, degenerative organic changes in their walls are the inevitable consequence. Permanent intimal thickenings occur which may advance to the stage of an obliterative endarteritis and seriously and permanently impair the function of the glomerulus. Just at this point, then, is the beginning of the true organic pathology in the kidney parenchyme!

The process of obliteration of the capillary tufts is a slow one, and for many years the gradual reduction in the number of functioning glomeruli, although it affects the kidney reserve, does not produce any clinical symptoms. The patient may notice the lowered reserve in that after heavy drinking his elimination is less prompt, and he may have an increasingly troublesome nocturia after such excesses in fluid intake. The elevations of blood pressure are likewise transient and intermittent, as the metabolic irritant produces the spasmodic glomerular ischemia, but as the process of obliteration of the kidney parenchyme proceeds, the reflex vasoconstriction of the splanchnic vessels probably becomes more constant, and added to it is the effect of the pressor substance on the entire peripheral vascular system—with a resulting constant increase in the blood pressure. Besides, under these conditions scleroses are prone to occur in the general vascular system as well as in the kidney vessels. The hypertension alone is probably not accountable for this sclerosis, but as suggested by Foster, it is probably the combination of the increased stress on the vessel walls, plus the degenerative action of retained metabolic products, with possibly the additional factor of an inherited tissue weakness which brings about the sclerosis. This hardening of the vessel walls, of course, tends to aid in maintaining the hypertension.

We have, then, as the expression of the very chronic form, a period of mild and intermittent hypertension, with a complete absence of any clinical evidence of renal disease. Moschowitz considers the cases of so-called primary or essential hypertension as identical with this stage. A second period follows, characterized by a gradually increasing hypertension with a gradually decreasing kidney reserve. The blood pressure is often very high, and the whole second period, sometimes lasting for many years, may present nothing more than this hypertension. The hypertrophy of the heart, of course, is the natural result of the increased peripheral resistance. During this second stage, there occur attacks of acute ischemia of the glomeruli, and the kidney, once the seat of an acute ischemia, seems predisposed to a recurrence, which adds its symptoms to those of the chronic

condition, and the patient may be suddenly taken with oedema and an enormous increase in the nitrogenous products of the blood.

The third stage appears when the changes in the glomerular vessels have progressed to a point where, despite the compensatory blood pressure increase, and despite the maximum efficiency of the remaining glomeruli, renal function cannot be maintained. The course of this third period is dependent upon the rapidity with which the glomeruli become obliterated, upon the ability of the organism to maintain the high blood pressure, and upon the cardiac efficiency.

In drawing conclusions from these studies, let us first briefly recapitulate the story of the development of this cardio-vascular-renal syndrome as it has been outlined. The very first change from the normal that can be determined by anatomical study is the ischemia of the glomerular capillaries with a dilatation of the afferent arterioles to those glomeruli. The primary cause of this ischemia is the factor yet undetermined, but there is considerabe evidence to indicate that it is some irritant which acts upon the walls of the capillaries from within their blood content, and while there is no reason to suppose that it does not similarly irritate all the capillaries in the vascular system to some extent, yet those of the renal glomeruli seem to be peculiarly susceptible to its influence, as evidenced by their early and active response. The ischemia itself often tends to cause an elevation of the general blood pressure possibly through the mechanism of a simultaneous reflex vaso-constriction of the splanchnic vessels, or of the vasomotor center itself, and the liberation of the same reflex mechanism of some pressor substance, as adrenalin, which will maintain the elevated blood pressure. At this earliest stage, the periods of hypertension, if present at all, are fleeting, and only coincident with the transient capillary ischemia in the kidney. As a result of the prolonged and repeated spasticity, however, actual degenerative changes arise in the glomerular capillaries, the impulses from the kidney vessels become more constant, the general vasoconstriction is increased, and the blood pressure gradually tends to rise. At the same time the kidney parenchyme is suffering because of the advancing disease of its own vessels, and slowly but progressively it responds to its injury by repair in a process which we recognize as chronic nephritis.

But, it may be said, were not all these instances quoted, merely early cases of so-called "essential hypertension" which would subsequently develop clinical signs of renal damage?—those which Christian has classified under "essential hypertension progressing into chronic nephritis." What have they to do with chronic nephritis? Moschowitz is very definitely of the opinion that the old classification of hypertension into "essential," "arteriosclerotic," and "nephritic" is a fallacy, in that it attempts to explain etiology in terms of pathological anatomy. Such a classification does not take into consideration the fact that the state of the patient, either clinically or at the autopsy table, represents merely a phase in the disease and not a complete end-result. He considers, therefore, that the terms "essential," "arteriosclerotic," and "nephritic" represent phases in one and the same disease process, in most cases, rather than three sharply defined clinical entities—that the majority of nephritides or cardio-nephritides begin clinically as cases of "essential hypertension," with or without cardiac hypertrophy, but without clinical indications of renal damage as apparently evidenced by absence of albumin and casts. There is one very certain fact—that the presence or degree of hypertension bears little or no relation to the presence or degree of kidney damage. An elevated blood pressure is often seen when the kidneys are apparently normal; a normal blood pressure may be found with profoundly diseased kidneys, as in the senile or arteriosclerotic organs

which are morphologically indistinguishable from those resulting from a progressive glomerulo-nephritis. All attempts to correlate these phenomena have been unsuccessful, either when we conceive of the destructive process within the organ as a whole, or when we analyze it in terms of the different components of the kidney structure. This is Moschowitz' main argument in support of his belief that the hypertension is the primary and the arterial and kidney lesions the secondary phenomena.

Yet there undoubtedly are instances which present definite clinical evidence of a chronic nephritis for a considerable period, without hypertension, but which subsequently gradually develop a high blood pressure. Certainly it would appear, therefore, that at least in these cases the hypertension is a result of the nephritis, if we wish to consider vascular lesions in the kidney as an actual nephritis. This is in accord with the observation made earlier in the paper, in which a mechanism has been suggested. The perplexing question is why in some instances the hypertension is such an early manifestation while in others it is delayed until the kidney damage is comparatively extensive.

SUMMARY AND CONCLUSIONS.

How then, are the questions which were asked in the beginning to be answered? Is the nephritis primary, or the hypertension? In a great many cases the hypertension undoubtedly is the primary condition, leading eventually to generalized vascular changes and a chronic nephritis. The cause of the hypertension in these cases is unknown, but it seems probable that it has to do with irritating products of a disordered metabolism. In such instances, then, whatever changes are seen in the kidney at autopsy represent injury due to the hypertension itself or to the toxin that caused the hypertension—that is, the chronic nephritis here appears to be the result, rather than the cause of the vascular changes.

There are, however, without question, many cases in which the vascular lesions in the kidney constitute the first pathological change, and actually induce the hypertension, to be folowed by more extensive and progressive nephritis as an expression of the response of the kidney to the deleterious effect of the advancing vascular disease in its own parenchyme.

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THE KAHN TEST.

One of the peculiarities of the medical man is that he is often both conservative and radical. He is willing, at one time, to try a new laboratory test or a method of treatment or an operation newly devised, and then for some unaccountable reason, at another time when some other new device is presented to him, he is unwilling to accept it or try it out and it falls by the wayside, sometimes to be resurrected long after the original observation had appeared, but frequently never to attain the stamp and usage of custom, the authenticity of a well-tried and proven method. Both the individual medical man and the general profession are responsible. At times there is seen almost a group hysteria when a new idea is presented. Every laboratory, operating theater, or office has men in them engaged in a study of the new conception. If in three or four places clinical investigation is being conducted on the new phase of disease, it is just as likely as not that there will be several hundred more in a few months conducting similar studies. On the other hand, a paper may appear, be received with a certain feeling of scepticism and no one apparently wishes to give the subject matter more than passing thought.

The above generalization applies in part to the Kahn test. First presented to the profession five years ago as a definite test for the presence or absence of syphilis, which had obvious advantages over the Wassermann reaction, it has never attained the popularity or general use that it deserves. Gradually, however, reports by competent observers are accumulating, which go to show that the test is of real value. Two recent publications substantiate the remarkably few notations already published, when one considers the hundreds of men engaged routinely in carrying out the Wassermann test. The first, by Hull,* points out that in 26,000 specimens examined by both the Wassermann and Kahn technique there was an agreement in the two methods in 97.8 percent, while in the 200 cases which disagreed, a study of the clinical histories indicated greater sensitivity of the Kahn than of the Wassermann. The second publication by the originator† of the method should not be discounted because the author is writing about a child of his own. It is a fair, non-prejudiced, scientific collection of figures and facts. A series of 174,580 serums were examined by both procedures, the complement fixation and the precipitin reaction. An absolute agreement of 96.77 per cent, and no agreement in 0.61 per cent, was found in the technic now employed. Data such as these are well worth careful consideration by two groups in particular: first, the heads of large hospitals and of state laboratories, and, second, the syphilographer and dermatologist engaged in the treatment of con-

siderable numbers of syphilitics. The saving of money, time and labor would appeal to those who have difficulty in meeting the budgets of laboratories supported by the state and private benefactions. The man with a considerable clientele of syphilitics should appreciate the lessened expense of the Kahn test to the patient, and the advantage of time saved in receiving the report, which may be had in an hour, and saved because the test does not require the sometimes frequent repetition of collection of blood because of faulty speciment submitted to the serologist.

LUCIEN MAURICE PROVOSTY

Simplicity of technic, freedom from technical errors, and a minimum expense should not be considered in any test. The only criterion should be accuracy. It does seem, in view of the above reports and many others, that the Kahn test is as accurate a method of determining the presence of syphilis in man as is the Wassermann reaction. The advantages of this test of Kahn should result in the more widespread supplanting of the Wassermann than is the case at the present time.

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DR. LUCIEN MAURICE PROVOSTY.

The unexpected passing of our esteemed confrerè, Maurice Provosty, was a shock not only to the profession, but to the community in which he labored so assiduously for the best portion of his existence.

He was a cultured gentleman, fearless in his convictions, and loyal and staunch in his friendships. His nobility of heart, his sympathetic nature and his unbounded charity endeared him to the well to do as well as to destitute suffering humanity.

The Orleans Parish Medical Society has lost one of its most active and devoted members. He was ever ready to rally to its banner in championing its every cause, and was unrelentless in his efforts for the welfare of his profession. His clearness of judgment, his logical arguments and his innate love of justice were of invaluable service on the different committees he so diligently served. He rendered signal service on the hospital abuse committee. It was greatly through his efforts that the profession of the city and state were successful in the enactment of a law by the last Legislative Assembly to curb this pernicious encroachment by the undeserving on the charity of the state.

Dr. Provosty was 59 years of age, a native of Pointe Coupee. After his internship at the Charity Hospital he began the practice of his profession in his native par-

ish, but for the past 23 years had resided in this city.

He was a graduate of Tulane University, lecturer and assistant in Clinical Medicine in the Graduate School of Medicine, Tulane University, from 1905 to 1911, and for the past several years Professor of Physiology at the Loyola School of Dentistry.

No warmer eulogy could be said of him than that he was a true, ethical, honorable and representative member of his profession and a perfect gentleman.

Requiscat in pace.

METRIC STANDARDS.

For the past many years the use of the metric system of weights and measures has been discussed widely pro and con. To date, the use of the decimal metric system has been adopted only in isolated instances, and as a result both the apothecaries' and the metric measures are employed. This has caused, and will continue to cause, considerable confusion everywhere, whereever measures are used. Accepted largely by the scientific world as being the most accurate, simplest system, metric standards are used in all types of scientific publications. But no one will doubt but that the only rational solution to the problem is the acceptance of one system or the other generally, with the complete discard of the rejected system.

Considering the situation from the physicians standpoint, many publications include measurement in both systems. Text books on therapeutics and prescription writing for example, must use both systems. If a physician uses one system, he must of necessity be familiar to some extent at least with the other. And so the confusion progresses. Medical students, and all college students as well, must learn both systems. And druggists must be able to use both systems accurately.

Believing that the acceptance of the metric system for general use throughout the United States will be of decided advantage to everyone concerned, various associations and organizations are preparing an extensive campaign for legislation along this line during the next Congressional session. Hon. Fred A. Britten of Illinois will introduce a liberal Metric Standards Bill in the House of Representatives during the early part of the new session.

The movement has very prominent endorsement and support. More than 300 chambers of commerce and industrial organizations are urging such legislation, among these the New Orleans Association of Commerce is especially active. Others include the National Wholesale Grocers Association, American Chemical Society, National Wholesale Druggists Association, and the National Research Council.

Especial organization and campaigning is being carried on by the Metric Association and the All-America Standards Council. The promotors and endorsers of this latter's work include men prominent in the scientific, industrial and professional world.

We are looking forward with anticipation to the success of such a movement, believing that it is the only means of solving present difficulties. We heartily endorse the program and the proposed legislation.

THE FIFE BROTHERS.

We hesitate to bring up this disagreeable subject again in these columns. But thinking it might be of some interest we have published in detail the decision that was rendered by Mr. Justice Overton of the Louisiana Supreme Court when the case was appealed from the Civil District Court November 29, 1926. The decision rendered by Judge W. H. Byrnes, Jr., in the lower court was affirmed for the reasons so well expressed.

Subsequently, on May 2, 1927, in an appeal to the United States Supreme Court, this decision was affirmed and upheld in

full. So that the matter rests here at present.

MR. JUSTICE OVERTON.

Monday, November 29th, 1926.

LOUISIANA STATE BOARD OF MEDICAL EXAMINERS,

vs.

JOSEPH B. FIFE AND WALTER W. FIFE.

No. 26,844.

Appeal from the Civil District Court, Parish of Orleans, Division "E," Hon. William H. Byrnes, Jr., Judge.

Act 56 of 1914, as amended and re-enacted, in part, by Act 54 of 1918, regulates the practice of medicine in this state. Section 1 of the latter act amends and re-enacts Section 1 of the former, and reads as follows:

"That from and after the promulgation of this act, no person shall practice medicine in any of its departments within the State of Louisiana, unless such person shall possess the necessary qualifications and requirements of this act."

Section 2 of the Act of 1918 amends and re-enacts Section 2 of the Act of 1914, and reads as follows:

"That after the promulgation of this act, any person before entering upon the practice of medicine in any of its branches shall present to one of the boards of medical examiners as herein constituted, a diploma from a college in good standing, of any sect teaching medicine or the healing art, and shall stand a satisfactory examination before the board upon the following branches, to-wit: Anatomy, physiology, chemistry, physical diagnosis, pathology and bacteriology, hygiene, surgery, theory and practice of medicine, materia medica, obstetrics and gynecology. The person shall also satisfy the board that he or she is twenty-one years of age, a citizen of the United States, of good moral character, and possesses a fair education; * * *

Section 9 of the Act of 1918 amends and re-enacts Section 13 of the Act of 1914. The section, as amended and re-enacted, reads, in part, as follows:

"The term practice of medicine, surgery, midwifery as used in this act is hereby defined to mean holding ones self to the public as being engaged within this state in the business of diagnosing, treating, curing, or relieving any bodily or mental disease, condition, infirmity, deformity, defect, ailment, or injury in any human being other than himself; whether by the use of any drug, instrument or force, whether physical or psychic, or of whatever nature, or of any other agency or means; or who shall examine any such person or material from such person for such person; whether such drug, instrument, force or other agency or means is to be applied or used by the patient or by any other person, or be for compensation of any kind or be gratuitous; or attending a woman in childbirth without the aid of a licensed physician, surgeon or midwife; or using any other title than optician, to indicate that one is engaged in the business of refracting or fitting glasses to the human eye."

Section 21 of the Act of 1914 is amended and re-enacted by Section 12 of the Act of 1918 so as to read:

"That this law shall not apply to the giving of family remedies in cases of emergency; or to legally licensed dentists, pharmacists, osteopaths, practicing according to existing laws; or to anyone attending in an emergency a woman in childbirth; or to anyone serving full time without salary or professional fees on the resident medical staff of any legally incorporated municipal or state hospital or asylum; nor to prohibit the practice of Christian Science or religious rules or ceremonies as a form of religious worship, devotion or healing, providing that the person administering or making use of, or assisting or prescribing such, rely on faith and prayer alone, and do not prescribe or administer drugs or medicine nor perform surgical or physical operations nor assume the title of, or hold themselves out to be, physicians or surgeons."

The plaintiff herein reached the conclusion that defendants were practicing medicine in the City of New Orleans without having obtained a certificate authorizing them to practice it, and, therefore, were practicing medicine in violation of the act, quoted, in part, above. Having reached that conclusion, plaintiff instituted the present suit, alleging that defendants were thus engaged in the practice of medicine in New Orleans, and praying that a writ of injunction issue and be perpetuated, restraining them from pursuing that calling until they procure the required certificate or license, and that they be condemned to pay the penalty of $100 and also $50 attorney's fees, provided by law.

If defendants were practicing medicine during the period set out in the petition herein, the evidence leaves no doubt that they were doing so without a license or certificate, issued by plaintiff, as required by law, authorizing them to do so. As to whether or not they were practicing medicine, it may be said that the evidence leaves no

doubt that, during the time mentioned, they were treating disease and other bodily infirmities. They were not treating these by using drugs of any description, nor were they using in their practice surgical instruments of any kind. If it be essential to constitute the practice of medicine that one or the other of these be used, then we think it clear that defendants, as contended by them, were not practicing medicine. But the practice of medicine has a broader signification than that. It may consist in the application of physical force to parts of the body for the purpose of curing disease or relieving bodily ailments, and the Legislature has, in part, so defined it. Sec. 9 of Act 56 of 1918, quoted *supra*. Defendants were engaged, it appears, in using physical force applied with the hands only, in treating disease. They were, in reality, practicing the system known as chiropractics, which, as defined substantially in Louisiana, State Board of Medical Examiners v. Cronk, 157 La. 321, 102 So. 415, is a system of adjusting the subluxated or slightly displaced vertebrae of the spinal column, by hand, for the restoration of health. See also "Chiropractics," 11 C. J., p. 758. To practice chiropractics is to practice medicine. Board of Medical Examiners v. Cronk, *supra;* Commonwealth v. Zimmerman, 221 Mass. 184, 108 N. E. 893; State v. Johnson, 84 Kan. 411, 114, p. 390. Since defendants were practicing medicine within the meaning of the statute, and since they were doing so without the required certificate, they were practicing in violation of the statute.

But defendants contend that the statute, as amended, is unconstitutional. Their contention is that to require them to stand an examination in surgery and materia medica, and perhaps in other things, is to require them to be qualified in subjects for which they and those who practice chiropractics have no need, and which bear no relation to that system, and since the effect of these requirements is to virtually suppress the practice of chiropractics in this state, they plead that the statute deprives them of liberty and property without due process of law, in violation of the constitutions of this state and of the United States.

At the outset it may be observed that no person has a natural or absolute right to practice medicine or surgery. It is a right granted upon condition. Allopathic State Board of Medical Examiners v. Fowler, 50 La. Ann. 1358, 1374, 24 So. 809; Lewis v. State, 155 S. W. 523. And although a state cannot prohibit the practice of medicine and surgery, and would hardly undertake to do such a thing, still it is well established that, under its police power, it may regulate, within reasonable bounds, for the protection of the public health, the practice of either, by defining the qualifications which one must possess before being admitted to practice the same, and, to make these regulations effective, to require the one intending to engage in the practice, to possess, before engaging therein, a certificate from the proper authority showing that he possesses the required qualifications. Hawker v. New York, 42 L. Ed. 1002; Dent v. West Virginia, 32 L. Ed. 623; Louisiana State Board of Medical Examiners v. Cronk, *supra;* Allopathic State Board of Medical Examiners v. Fowler, *supra*. The Legislature, however, in defining these requirements, cannot prescribe, as a condition to the right to practice, knowledge of a subject, which bears no relation to the practice of medicine. Dent v. West Virginia, *supra*. But, this does not mean that the Legislature, in exercising its power to prescribe the qualifications, which, in its judgment, one should possess to practice medicine, must make the requirements such as to provide for every school of medicine that may exist, by requiring of those belonging to each particular school, a knowledge only of those subjects, which the theory of healing, advocated and put in operation by each school, requires. Were it otherwise, the Legislature would be greatly hampered in the exercise of its power to protect the general health and the public from imposition and fraud. Every group of men who might get together and evolve some system, designed to restore health, would be entitled to recognition, and all that could be required of them would be evidence of good character and a knowledge of such subjects as their particular school seemed to require, although the Legislature might deem with reason a knowledge of such subjects wholly insufficient to entitle any one to treat the sick. However, the Legislature is not hampered by any such restriction in the exercise of its power to protect the public health. As truly said in Allopathic State Board of Medical Examiners v. Fowler, *supra* (50 La. Ann. 1358, 1374, 1375):

"We know of no constitutional right given to particular persons, who, entertaining peculiar theories of medicine, group themselves together, and call themselves a special school of medicine under a selected name, to be recognized as and dealt with as such. An indefinite number of schools of medicine might claim recognition, with no fixed ascertained standard to pass upon their pretensions."

Our conclusion is that plaintiffs have no constitutional grounds to complain, by reason of the fact that, before being permitted to treat the sick, they must make it appear, in the manner prescribed by law, that they have an adequate knowledge of materia medica and surgery, and of the remaining subjects, required by Section 2 of Act 56 of 1914, as amended by Section 2 of Act 54 of 1918, quoted above. While materia medica and surgery are not used in the chiropractic system, still they, as well as the other subjects required by the act, as amended, bear a relation to the

practice of medicine as a general science and that is sufficient to prevent the act from being unconstitutional, in view of the fact that the Legislature is not bound to recognize every school of medicine, and deal with it as such.

Another contention of defendants is that the act, as amended, is violative of the Fourteenth Amendment to the Constitution of the United States, in that it denies them the equal protection of the laws, by unjustly discriminating against them. Defendants base this contention on the fact that the Legislature has withdrawn, or practically withdrawn, osteopaths and dentists from the operation of the Act of 1914, as amended, and has provided regulations for their admission to practice, as well as for the admission of chiropodists and trained nurses, different from those which it requires for the practice of medicine and surgery, not requiring of them a full course, or none at all, according to the needs of the calling, in materia medica, surgery, and other subjects, named in the medical and surgical act, cited, whereas it requires of those, by not excepting them from the operation of the act, who desire to practice the chiropractic system, a full course in materia medica and surgery, though in practicing, they, in accordance with their school, would use neither surgery nor drugs.

Without going into detail, by stating the requirements for the admission of osteopaths, dentists, chiropodists and trained nurses to practice, and granting for the purpose of this case that all who follow these callings may be considered as practicing medicine or surgery, to a greater or lesser degree, it may be said that the requirements for admission to them are different from those prescribed by the Act of 1914, as amended, relating to the practice of medicine and surgery, and that there is no requirement, prescribed by the Legislature, requiring one who desires to follow any one of these callings to take a full course in materia medica or surgery before being admitted to pursue any one of them, and it may be safely assumed that the various boards admitting applicants do not require anything of the kind. Act 185 of 1908; Act 88 of 1900 and Sec. 1 of Act 32 of 1894; Act 159 of 1916; Act 138 of 1912. Defendants do not complain that these exceptions, in favor of osteopaths, dentists, chiropodists, and trained nurses, make the Act of 1914, as amended, unconstitutional, but their complaint is that the act is unconstitutional, because it discriminates against them by not granting them similar privileges, but requires them to take the full medical and surgical course. If the Legislature were called upon to recognize every school of medicine, and to deal with it as such, requiring nothing but what the system practiced by each school demands, there might be some force to defendants' contention, but, as we have held, the Legislature is not called upon to do so, but has a reasonable discretion as to whether a particular school should be recognized and special provision made for it. Since the Legislature has such discretion, defendants cannot complain, on the ground of being unjustly discriminated against, because the Legislature has not deemed proper to recognize their school of medicine, and make special provision for those desiring to practice that system, by prescribing a course of study in accord with the theories which it holds for restoring health. See Allopathic State Board of Medical Examiners v. Fowler, *supra;* Johnson v. State, 267 S. W. 1057; Singh v. State, 146 S. W. 891; State v. Morrison, 127 S. E. 75.

Our conclusion is that on none of the grounds urged is the act complained of unconstitutional. If defendants wish to treat the sick in accordance with the theories held by them, they must comply first with the Act of 1914, as amended. So thought the trial judge, and we think that his judgment perpetuating the writ of injunction, and awarding the penalty and attorney's fees, prayed for, is correct.

The judgment appealed from is therefore affirmed.

CORRESPONDENCE.

August 20.

Editorial Board, New Orleans Medical and Surgical Journal.

Dear Sirs:

One finds a very real difference between the hospitals and universities of London and Amsterdam, which are in most ways conducted on similar plans, and those of Copenhagen and Denmark. In this latter small but prosperous country the ideals of a socialistic state are relatively closely attained. It is found that many of the tenets of socialism are actively in force; old age pensions, non-employment doles, state care of the sick are not a novelty but an accepted fact. The consequence of these money absorbing projects is that there are no really poor people in the community, but by the same token there are no millionaires and the relatively well-to-do are taxed to an extent almost unbelievable. State control of everything which has to do with the general community is reflected to a high degree in the university and the hospitals which I had the pleasure and honor of visiting with Dr. H. C. Gram, son of the man who gave his name to the well known stain, an eponym which is used probably as frequently in medicine as any which comes to mind, excepting probably the ubiquitous Wasser-

mann. Incidentally, an American feels like a mere child nationally when he considers that this Danish family directly have been connected with the university since 1583.

The University Medical Department is free to any aspiring candidate who has passed certain examinations and who has the ambition to spend seven years in training and in learning his profession. The two earlier years in the course are spent in studies which closely resemble our premedical years in college, but even during this time the student is given elementary training in the simple subjects, such as bandaging, pharmacy, and so on. After two years of such work he commences not only preclinical but also clinical training. Knowing but a minimum of medicine he is daily required to spend a certain number of hours a week in the wards. The student in these early years simply follows the teacher around and observes what he does and says. I can not see how he gains much by these mornings in the wards without a knowledge of anatomy, physiology, and pathology, subjects which he does not complete for two or three years after his introduction to the wards. The last two years in the clinical subject, however, are beautifully adequate. The student virtually lives in the hospital. He is not only the clinical clerk, taking the histories and keeping the records, but he is also almost in the role of an interne who is on duty part of the time. His work is, however, carefully controlled and directed and supervised by the internes and visiting staff. This, in brief, is the manner in which a Danish physician secures his medical education. It represents a tremendous number of hours devoted to clinical subjects, many more than are given in American schools, but many of which are useless and are so much time wasted. Despite these hours which are, I believe, wasted, arguments, which contend that they are not valueless, would expiate upon the splendidly trained products which are in fact turned out of the medical school with a doctor's degree.

The relation of the State Hospital, the Rigshospitalet, and the University is a close one. The professors and their assistants are paid in part by the University and in part by the controllers of the Hospital funds. In addition, on the grounds of the hospital are large and comfortable homes for the heads of the departments and at each end of the hospital administration building commodious seven to nine room apartments for the staff assistants. The hospital services are only assigned to the main divisions of medicine; surgery, internal medicine, obstetrics, and pediatrics are the only branches that are directly represented by services. The specialties are under the care of these various departments, but specially trained men are available as consultants who treat and care for the difficult and unusual cases, but who do not live on the hospital grounds nor have wards assigned to them. In medicine there are two divisions, totally separated and functioning as independent units. The one is in charge of Faber, who last year visited the United States and whose book, "Nosography in Medicine," is a little gem. The other is run by Lundsgaard, who spent several years in post-graduate study in this country (U. S.).

The admission to the wards is controlled by the staff. They have the privilege of denying or admitting patients to the several services. As a consequence they can more or less select the type of patient and case they wish to have in the ward. Patients pay approximately $1.85 per day for beds in the ward, or this sum is paid by certain state funds. This money does not begin to pay the cost per bed per day rate which is more than double the amount assessed. The difference is paid by the state in a yearly appropriation. Patients who can afford private rooms are allowed to take them, but charges for treatment and medical attention are charged at definite rates which go to the state and not the attending physician.

The State Hospital is a large and magnificent structure built on the pavilion system. It is surrounded by beautiful gardens. The gardens are so wonderful that detractors of the medical men on the staff are wont to say, "Well, at least they have good gardeners at the State Hospital." The wards are commodious, airy, and well arranged. Each large ward is subdivided by means of small partitions with smaller units. From the middle of each ward there go off two rooms, the one is for the nurses' use, the keeping of records, medicines, and so on; the other room is a ward laboratory where the routine examinations are carried out. One interesting feature of these wards is a small black board suspended over the head of the bed of each patient. On this is written the diagnosis, the temperature, and pulse rate, often the blood pressure and any unusual findings. In this way the visiting staff or a visitor can grasp in a minute not only the diagnosis but also the important features of a case.

The roentgenologic, special laboratories, libraries and clinics are complete and modern in every respect. Another feature deserves mention. There is a large building for physical therapy where massage, hydrotherapy, passive and active exercises, and similar methods of applied treatment are carried out in a manner made famous by the Scandinavians and utterly unknown to us in completeness and thoroughness.

The other large hospital in Copenhagen, the Bispebjerghospitalet, is a city hospital. It, also, is a magnificent institution. Some distance from the center of the city, an even larger area can be utilized than by the State Hospital. In many

respects the two institutions are similar. There are some differences, however. The city hospital has to accept any and all types of cases, consequently there are many patients with chronic disease, many cases of chronic arthritis, for example, a disorder extremely common in this cold and damp climate of Denmark. Many of the patients also remain in the hospital, if they can, for an unduly long period. They not only have the bright and comfortable ward to stay in, with the attendant nursing care, bed, board and idleness, but they, also, receive sick benefit from the government. I can readily picture the state of affairs in the Charity Hospital of New Orleans, where it is so often difficult to get rid of patients no longer requiring hospitalization, were these self same patients being paid regular wages by the State of Louisiana as long as they were in the wards. I imagine these hospital boarders would have to be run out by the police.

Dr. Meulengracht is the visiting physician, who kindly showed me around. He, as the physician to the State Hospital, is paid a salary, but in the case of the physician of the City Hospital it is paid by the civic authorities and not by the combined State and University funds. The visiting staff at this hospital give half time service or more. Meulengracht made his rounds while I was with him. This consumed a little over two hours. He had already been in the institution an hour before my arrival, and his laboratory and consultation duties would require several more hours of that day's time, he told me as I left him. It was really quite inspiring to see how each patient was duly visited that day, but not only that day but each day the patients are examined, studied and observed.

Many cases of arthritis are seen, as I already said. The European physicians take but little stock in our views of the great importance of focal infection. They do not believe the arthridides, the majority of times, are due to focal infection. They treat the patient with arthritis with massage, hydrotherapy, heliotherapy, diet, and do better than do we, I believe, with our rather promiscuous teeth extractions, tonsillectomies, prostatectomies, and other ectomies performed to cure chronic deforming joint disabilities. Incidentally, I find the European doctor a sincere admirer of American medicine and methods, except in one particular and that is an almost universal tendency to scoff at the frequency with which the tonsils are removed from the members of America's future citizenry. Rheumatic fever is, also, a frequent disease, but there are apparently only a few cardiac cripples. Meulengracht is well known for his work on diseases of the blood. He has, as a consequence, an unduly large number of patients suffering from blood disorders. Incidentally, he told me that of eight patients with pernicious anemia, who had been upon the Whipple-Minot liver regimen, three had died. Chlorosis, a disease which we think has disappeared with the corset, is no longer seen, despite the fact that the dress of the Northern European differs in many respects from the American woman, this being one respect. Pernicious anemia is a disease which is increasing in frequency, due to the fact, of course, that being a disease of later life there are more people living today past the age of forty than in days passed.

Just one word more about the interesting methods of the Danes of selecting the heads of departments in the University if seventy-five per cent of the faculty do not agree on any one man. In medicine, as an example, the candidates for the position must fulfill certain requirements which are sufficiently rigid to bar promiscuous applicants. The last examination found three men who had accomplished the necessary preliminary work. These three men who were then examined by a committee of seven medical men representing the State, the University faculty and so that there would be absolute fairness two examiners came from Norway and Sweden. The candidates were then given a three day trial. They were required to give didactic lectures and clinics upon patients each day. They were allowed to choose their own subject one day, the next day they could have an hour's time to prepare on a subject assigned to them, and on still another day they were obliged to speak for an hour without preparation on any subject the committee selected and told to them immediately before their appearance in the lecture hall. After this severe test the committee decides by majority vote upon the man they think has made the best showing.

I trust that this communication has not been too prolonged nor too rambling, but that it may give some idea, sketchly drawn, of medicine in one small European State.

Very sincerely,

J. H. Musser.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

The Orleans Parish Medical Society will resume their regular meetings on October 10th.

The President has appointed the following as a State Wide Committee on Publicity as instructed by the Conference held under the auspices of the Committee on Public Policy and Legislation in New Orleans, July 25th, and approved by the Executive Committee:

Drs. L. J. Menville, H. E. Bernadas, F. M. Johns, Urban Maes, N. N. Blackshear, A. E. Fossier, B. A. Ledbetter, Oscar Dowling, H. Theodore Simon, R. B. Harrison, H. B. Gessner, all of New Orleans; J. E. Knighton, I. B. Rougon, S. C. Barrow, all of Shreveport; R. O. Simmons, Marvin Cappel, Clarence Pierson, all of Alexandria; D. C. Iles, J. G. Martin, all of Lake Charles; D. I. Hirsch, J. Q. Graves, C. P. Gray, all of Monroe; L. J. Williams, C. A. Weiss, all of Baton Rouge; S. B. Wolff, B. A. Littell, all of Opelousas; L. O. Clark, Lafayette; F. T. Gouaux, Lockport; R. F. DeRouen, Clarence; C. C. DeGravelles, Morgan City; S. L. White, Ruston; J. B. Benton, Minden; C. O. Wolff, Haynesville; J. K. Griffith, Slidell.

This Committee will meet in the early part of October, time and place to be designated by the President, and formulate plans and also appoint a sub-committee to carry them out.

Any member of the Orleans Parish Medical Society moving his office on or about October 1st will kindly communicate with Secretary, 1551 Canal Street.

At the last annual meeting of the Louisiana Dermatological Society, Dr. J. N. Roussel was elected President; Dr. R. A. Oriol, Vice-President; and Dr. T. A. Maxwell, Secretary.

RADIOLOGICAL SOCIETY OF NORTH AMERICA.

Several Radiologists from Europe, Canada, Mexico, Cuba and American Possessions wiill attend the meeting of the Radiological Society of North America in New Orleans, November 28th to December 2d. About four to six hundred members expect to attend.

Several cruises to Cuba, Panama, etc., are being thought of for the members. A trip to the Lepers Colony will be a part of the program.

The medical profession in general is giving their active support, and a most successful meeting is contemplated.

DIED: Blumes J. Lemoine, Cottonport, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1895; member of the Louisiana State Medical Society; aged 56; died suddenly, July 26, at Baton Rouge, of angina pectoris.

DIED: Daniel Ryan Sartor, Alto, La.; Medical Department University of Louisiana, New Orleans, 1872; aged 79; died, July 6, as the result of hypertrophy of the prostate.

DIED: Carlie Wyley Davidson, Bogalusa, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1914; aged 45; died suddenly, August 3, of angina pectoris.

NEW STEP IN INTERNATIONAL RELATIONS OF PHYSICIANS.

The cordial relations of the physicians of America, North and South, and their colleagues of the Old World were further expressed by the appointment of American representatives to the editorial cabinet of the Acta Dermato-Venereologica published under the direction of Dr. Johan Almkvist of Stockholm, Sweden. The nominees are: Howard Morrow of San Francisco, Howard Fox of New York, J. B. Shelmire of Dallas, D. R. Smith of Toronto, Pardo Castello of Havana, and Herman Goodman of New York.

The Acta Dermato-Venereologica publishes original contributions in French, German, or English within the fields of dermatology, urology, and social hygiene, and items of interest of persons or progress in these specialties.

American literary contributions should be addressed to Dr. Herman Goodman, 18 East 89th Street, New York City.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

The North Mississippi Medical Society met in Water Valley, Mississippi, August 24th, 1927, and presented the following program:

1. Thyroidectomy. J. C. Cully, Oxford.

2. Spinal Anesthesia in Major Surgery. Dr. Avent, Grenada.

3. Treatment of Diseases of the Prostate Gland. R. A. Hennessey, Memphis.

4. Some Recent Surgery Among Chinese. R. V. Taylor, Jr., Memphis.

5. Some Principles in the Management of Gastric Lesions. R. L. Sanders, Memphis.

The Tri-County Medical Society met in Brookhaven, September 13th, with Vice-President M. D. Ratcliff in the chair. Dr. Elise Rutledge is Secretary. Dr. John Darrington, President of the State Association, and Dr. W. E. Noblin of Yazoo City, were guests of honor. The following program was given:

1. Why a County Health Unit in Every County. J. M. Dampeer, Crystal Springs.

2. A Discussion of Our Plans and Policies. John Darrington, Pres. of State Association, Yazoo City.

The next meeting of this society will be held in Brookhaven, December 13th.

The South Mississippi Medical Society met in New Augusta on September 8th and presented the following program:

1. Birth Injuries. Charles Bloom, New Orleans.

2. Common Eye Injuries. "Buck" Buchanan, Hattiesburg.

3. Duodenal Ulcer. L. B. Hudson, Hattiesburg.

4. Obstetrics. H. L. McKinnon, Hattiesburg.

5. Abruptio Placentae. J. S. Gatlin, Laurel.

6. Infant Feeding. Joe Green, Richton.

ANOTHER STRAW VOTE.

The "Hon." Bernard Macfadden has recently been circularizing the much ridiculed and despised medical profession. It is hard to think that any physician who scorns the idea of cults would be taken in by such a transparent piece of advertising for his salacious and suggestive magazine. It is unthinkable that very many physicians will sign and return the card.

CHILDREN'S HEALTH CAMP.

The third season of the Children's Health Camp closed on Wednesday, August 31st. This has been the first Summer Camp season at Sanatorium and in most respects this has been the most successful of the three seasons. As many of the camp guests are from homes where there is tuberculosis it is desirable that these children have the advantage of medical attention from specialists along this line. A carefully balanced schedule of recreation, study, rest and proper food has been maintained throughout the camp period. As a result each child at the time of departure showed the beneficient result of the summer outing in a more erect carriage, better rounded out body and wholesome facial expression. The months to come will further show the good work done during camp days through the heightened resistance of each child to infectuous diseases.

Dr. and Mrs. Jesse L. Roark of Sanatorium are receiving congratulations on the birth of a son at Baptist Hospital, Jackson, Mississippi, August 30th.

Dr. John Walker, in charge of the tuberculosis unit at the State Hospital for Insane at Jackson, Mississippi, has been spending some time at Sanatorium observing mode of treatment employed in treatment of tuberculosis at the Mississippi State Sanatorium.

Dr. W. A. Toomer, resident physician at the State Sanatorium, left on September 11th to engage in private practice at Tupelo, Mississippi. Just prior to opening his office in Tupelo, Dr. Toomer will spend some time in study at Johns Hopkins at Baltimore. Dr. Toomer has been a member of the medical staff at Sanatorium since September 15th, 1923, and he, Mrs. Toomer and their two daughters will be greatly missed from the Sanatorium group.

Dr. H. M. Anderson, a former member of the Sanatorium medical staff, will fill the place left vacant by Dr. Toomer. Dr. Anderson was forced to resign his position at Sanatorirum about three years ago due to ill health. Since that time he has been resident physician at both the Texas State Tuberculosis Sanatorium at Sanatorium, Texas, and Cottage Sanatorium at San Angelo, Texas. Dr. and Mrs. Anderson are being happily received by their old friends at Sanatorium.

On Thursday, August 18th, the Mississippi State Sanatorium was visited by Dr. Augustine

Hernandez Mejia, Director General of the State Department of Health of the State of Vera Cruz, Mexico, and Dr. Henry Carr, Representative of the International Health Division of the Rockefeller Foundation. These guests were brought to Sanatorium by Dr. and Mrs. Felix Underwood of Jackson. Both men expressed themselves as being greatly pleased and favorably impressed by all observed at Sanatorium. The Children's Health Camp was of special interest to them, they stated, because it represented a start toward a permanent year round preventorium for children at Sanatorium.

The especiai reason for the visit of these men to Sanatorium at this time is because of their interest in and connection with the large tuberculosis hospital shortly to be erected in the mountains just overlooking the City of Vera Cruz, this hospital to be directly under the supervision of the Vera Cruz State Board of Health. Dr. Carr at this time is working in co-operation with the public health activities of the Government of Mexico and he and Dr. Mejia are now making a tour of inspection of a few institutions of this character which have been suggested to them as being the outstanding institutions of this type in the United States. Upon leaving Mississippi these gentlemen were going to observe mode of treatment pursued and hospital management employed in a similar institution in New York State.

Dr. C. E. Walker, Assistant Superintendent of the Mississippi State Sanatorium has been spending his summer vacation at Memphis and Ripley, Tennessee. Mrs. Walker and the children accompanied Dr. Walker on his summer outing.

THE RECREATION CONGRESS.

The Playground and Recreation Association of America is sponsoring this congress which meets in Memphis, October 3-7, 1927, with its headquarters in the Peabody Hotel.

The Recreation Congress, unlike many conventions, is not limited to any professional group, but is for everybody who is interested in play or art or recreation and in giving these a chance to grow. In its special meetings it goes very concretely into the practical problems of workers in different divisions of the field. If one is interested in an organized community recreation program, in the church's use of recreation, in how play can be used in the school, home, club, or factory, in any special activity such as music, drama, art, camping, athletics, or games, he will be able to attend discussions of his special subject by leaders and workers in the field.

Twice daily, morning and evening, the Congress gathers for general meetings which are addressed by men and women of national reputation. In addition, twenty-eight different section meetings are held during the week to discuss various play and recreation problems. Following brief presentations of recreation topics by qualified leaders, discussion is open to all.

Because many delegates desire to learn more thoroughly certain play activities that will be useful to them, the Recreation Congress Institute has been organized. This Institute is made up of a series of classes. Each day from 4 to 5:30 sessions of the Institute under expert leadership will be conducted in music, drama, games, traditional rhythmic games, story telling, nature study and handcraft. These are open and free to all who want to enjoy these activities during the week and better prepare themselves for leadership.

M. S. M. A. NEWS.

Dear Doctor Ullman:

There are thirteen physicians in active practice in DeSoto county. Our county society meets every other month; considerable interest is manifested in these meetings. Our county adjoins Shelby county, Tennessee, in which is situated Memphis, so we can have the advantages of most excellent hospitals, clinics, and the Medical Department of the University of Tennessee. The Southern Medical Association will convene in Memphis in November; much interest is being manifested in this great gathering of the physicians of the South. I am positively of the opinion that no county in Mississippi has more royal and loyal doctors than DeSoto county. I think that the New Orleans Medical and Surgical Journal is the most beneficial magazine that I subscribe to, and I get quite a number. The August number was particularly fine, and permit me to congratulate you on the Mississippi News. You are the right man in the right place.

With best wishes, I beg to remain,

Sincerely yours,

(Signed) L. L. MINOR,
Secretary, DeSoto County Medical
Society, Memphis, Tenn.

DIED: Chester Knox Roe, Bay St. Louis, Miss.; Louisville (Ky.) Medical College, 1871; Civil War veteran; aged 82; died, July 21, of nephritis.

The Lauderdale County Board of Supervisors at their September meeting arranged a $25,000 budget for a full-time health department for Lauderdale County and the City of Meridian to begin operations January 1, 1928.

The Monroe County Board of Supervisors arranged a $10,000 budget at their September meeting for organizing and conducting a full-time health department beginning January 1, 1928.

Since July first, Sunflower, Humphreys, Issaquena, Yazoo and Warren Counties have organized full-time co-operative health departments, making a total of 23 full-time counties now in operation and two others to begin full-time work on January 1, 1928.

During July and August and up until September fifteenth, twelve cities and towns of the State officially adopted the Standard Milk Ordinance. Sanitary work under this ordinance in these cities and towns will be begun at once which will insure a safe milk supply.

The "Know Mississippi Better" train in its sixteen days tour of the West visited twelve states and thirty-one cities and towns. In ten of these States the State Health Officer or a special representative met and entertained the State Health Officer of Mississippi, which was very much appreciated and gave him an opportunity to look into the public health programs of a number of States. It was regrettable to learn that in a few of the States the Board of Health seemed to be run for the sake of politics and not for the sake of the people. Whenever a Board of Health is made the football of politics by being disorganized and confused with each succeeding State Administration, it will soon lose the confidence of the medical profession, the people generally, the Legislature, the U. S. Public Health Service, the International Health Board, the Federal Children's Bureau, and other contributing agencies and is doomed to failure. Mississippi should be congratulated on the fact that the State Board of Health is not now, nor will it ever be permitted to be again, a strictly political Board whose policies and programs will be tossed hither and thither with each succeeding political wave that sweeps the State.

The Federal Caustic Poison Act was passed by Congress and became effective on the date of its passage, March 4, 1927. The law provides that no penalty or condemnation shall be enforced for any violation of the act occurring within six months of its passage. Tentative regulations for the enforcement of the law have been prepared by the Department of Agriculture.

The purpose of the law is to safeguard the users of certain dangerous caustic and corrosive acids, alkalies, and other substances by requiring that parcels, packages, or containers suitable for household use bear upon the label or sticker the word "Poison" in uncondensed Gothic capital letters of not less than 24 point size, and immediately following the word "Poison" directions for treatment in case of internal or external injury.

BOOK REVIEWS

Therapeutic Malaria: By G. de M. Rudolf, M.R.C.S., L.R.C.P., D.P.H., D.P.M. Oxford Medical Publications. 1927. 223 p.

The author has had a large experience as assistant medical officer with therapeutic malaria treatment of neuro-syphilis at Claybury Mental Hospital. He combines his opinion and observations with statement of opinions and observations of many others throughout the world who have had more or less experience.

The book will be found interesting and instructive to those who expect to employ this new method of treatment of general paralysis. All phases of the subject are discussed and information bearing on almost any question in connection with the treatment is presented.

Although all new methods of treatment are likely to be unduly favorable, one who reads this book feels that there is little or no question in the mind of the author but that therapeutic malaria is a valuable remedy for paresis in many cases.

C. C. BASS, M. D.

Physical Diagnosis: By Richard C. Cabot, M. D. 9th ed. New York, William Wood and Company. 1927. 536 p.

The latest revised edition of one of the standard texts on this subject. It is apparently more complete in many details than the previous editions.

Of some interest is the reference to phonographic records which have been made, under the direction of the author and a collaborator, of the various normal and abnormal heart sounds. It is said that these records will probably be marketed some time this year.

WILLARD R. WIRTH, M. D.

Ker's Manual of Fevers: Revised by Claude Rundle, M. D. 3rd ed. Liverpool, Oxford University Press. 1927. 346 p.

This text is a detailed consideration of the infectious diseases. It is well written, rather concise without being too brief. The illustrations are few, but apparently adequate.

The introduction considers the general subject of fever. Then follows a chapter upon the methods of examination of rashes and throats. Subsequent chapters then consider in detail the various exanthems and infectious diseases, including their treatment.

The title of the text is rather misleading, and would be much better changed.

WILLARD R. WIRTH, M. D.

Hewat's Examination of the Urine: By G. L. Malcolm-Smith, M. B., Ch. B., F. R. C. P. Ed. Rev. Ed. No. 7. Edinburgh, E. and S. Livingstone. 1926. 228 p.

The revised edition of this work includes not only a compact concise treatise upon the examination of urine, but also an introduction into the examination of blood, sputum, gastric contents, feces, and cerebro-spinal fluid.

While the various chemical methods and techniques discussed in the book are not sufficiently elaborate for the modern hospital laboratory, they are practical to the worker without special laboratory experience and with limited apparatus. This work may be recommended as one describing simple technic easily read and not burdened with an excessive amount of explanation.

EDWIN H. LAWSON, M. D.

Text-Book of Medicine: By American Authors; ed. by Russell L. Cecil, A. B., M. D. Philadelphia and London, W. B. Saunders Co. 1927. 1500 p.

This volume is a new venture in single volume text-books of medicine in that there are some one hundred and thirty contributors—each contributor writing upon some subjects or group of diseases of which he is more or less of an authority. On the whole, the editor is to be congratulated on his choice of contributors.

The arrangement of the book is very similar to that of the older text-books of medicine. One misses, perhaps, the fine, even-flowing style of Osler, for instance, but this is, of course, inevitable in such a treatise and does not detract from its intrinsic value. Furthermore, in this age of specialism, it would take another Osler to cover the entire field of internal medicine, and geniuses of that type are indeed rare. This book is therefore the natural outcrop of the trend of the times and represents the opinions of many authorities in condensed form on all branches of internal medicine. In a single volume text-book of medicine, one of the most important elements is the proper allowance of space to each subject according to its relative importance. This has been admirably carried out by the editor with no doubt considerable difficulty, as each contributor probably considered his subject the most important.

In concluding the reviewer would state that his task in reviewing this book was an unusually pleasant and profitable one and he can cheerfully recommend it not only to students but practitioners of medicine.

RANDOLPH LYONS, M. D.

The Cause and Cure of Speech Disorders: By James Sonnett Green, M. D., and Emilie J. Wells, B. A. New York, The MacMillan Company. 1927. 458 p.

In the "Cause and Cure of Speech Disorders" Dr. Greene presents the results of his vast experience to us—a survey of over ten thousand defective speech cases—in a clear, concise manner, and singularly free from technicalities.

The book is divided into three parts:

The Person Who Stutters

The Person Who Stammers

The Person Whose Voice Is Abnormal

For the sake of the general reader it must be clearly understood that stuttering and stammering are not to be considered interchangeable terms, but two distinct classifications of speech anomalies. "Stammering he defines as speech of a defective nature, which may arise either from a central involvement, or from a peripheral involvement."

"Stuttering he defines as speech of a hesitating nature conditioned on certain states of mind in the form of emotions, feelings, attitudes, or ideas."

From cover to cover the book is convincing and interesting, but the outstanding feature of it is the section devoted to stuttering. Here the author makes a detailed and exhaustive analysis of the mental and emotional states of the stutterer.

The thoroughness with which he investigates the subject and the importance of his deductions not only accord them a passing interest but a place of permanent value.

A large group of excellent exercises covering the needs of the speech defective is appended in Part IV of the book, and both pupil and instructor may profit from their study.

The book is a valuable contribution to the literature of this subject, and should meet with a cordial reception.

SALLY SPYKER.

Textbook on Diseases of the Skin and Syphilis: By Albert Strickler, M. D. Philadelphia, F. A. Davis Co. 1927. 689 p.

The book is well written and the tables of classification well arranged. The volume has three weak points: Pellagra treatment is not fully gone into according to latest findings; in the section of syphilis, very little mention is made of salvarsan dermatitis; no mention is made of its treatment; radium and its application has only a few paragraphs, while pages should be devoted to technic of screening, dosage according to size, depth of lesions, etc. The modern doctor and medical students will demand that this be included in a modern book on dermatology. If the author will enlarge these sections in his next edition, it will become one of the best books on dermatology.

JOHN A. DEVRON, M. D.

Disorders of the Nose, Throat and Ear: Problems of Deafness: By Aaron Roth, M. D., F. A. C. S. Brooklyn, Physicians' and Surgeons' Book Co. 1927. 238 p.

A well-written little volume, primarily designed for those students who desire only a superficial knowledge of otolaryngology. The chapters on deafness are well worth reading and serve to intensify the reader's interest in this subject. The subject matter, while presented in highly concentrated form, is written in simple non-technical terms and arranged in instructive sequence so that the interest of the reader is held to the end.

F. E. LEJEUNE, M. D.

General Therapeutics: Ed. by Bernard Fantus, M. S., M. D. (Practical Medicine Series.) Chicago, Yearbook Publishers. 1927. 399 p.

This complete and concise review and summary of the year's development in therapeutics, will more than repay a perusal of its contents. The extensive reading of the author, coupled with a happy faculty for presenting his subject matter, clearly makes the book a welcome companion to one seeking an open spot in the jungle. That the author is thoroughly acquainted with therapeutics, one soon learns. Drugs and methods in therapeutics that have made a decided impression during the year are dealt with at length and from various viewpoints. The literary style is good and the book succeeds in holding one's interest. The publishers are to be commended for printing the volume in such good, readable type, and in such a handy size.

I. L. ROBBINS, M. D.

A Terminology of Disease: By Adrian V. S. Lambert, M. D. 3d ed. rev. New York, Paul B. Hoeber. 1926. 158 p.

This is a revised third edition. Many changes have been made, but the general arrangement has been left intact. The author is well aware of the difficulties presented by a manual of this kind when the vast array of synonyms perplexing one in medicine, is considered. A new edition of such a book is not only the indication of growing desire for more standardization and uniformity of terminology but more especially an indication that the author has apparently succeeded quite well

in his task. I must heartily agree with the author's remark, "If it aids in making hospital records more accessible, it has more than justified its publication." A book of this nature should serve a worthy purpose.

I. L. ROBBINS, M. D.

Manual of Materia Medica for Medical Students: By E. Quin Thornton, M. D. 2d ed., thoroughly revised. Philadelphia, Lea & Febiger. 1927. 394 p.

This book, according to the author, has been thoroughly revised and brought up to date. The revision is based on the last centennial revision of the U. S. Pharmacopoeia.

The grouping and arrangement of such a book is at best difficult, and though one feels that the author has probably devoted too much space to some subjects and not enough to others, yet the volume may be recommended as a whole. I cannot but feel that for a book aiming for conservation of energy and time, several subjects as "Latin Essentials in Prescription Writing" and "Incompatibility" are quite lengthy. The Table of Doses helps greatly to bear out the aims of the book. In conclusion, I may say that it represents a difficult task well done.

I. L. ROBBINS, M. D.

Diseases of the Newborn: By James Burnet. Oxford University Press. 1927.

This monograph of 275 pages covers the anatomy, physiology and diseases of the newborn. It is one of the Oxford Medical publications. That fact alone will give it wide circulation.

The book itself is very readable, written in clear, concise style. As might be expected in a volume of such small size, it is impossible to cover all details and to include all therapeutic measures. There are, however, many sins of omission as well as commission. For example, in outlining the treatment of thrush, nothing more than boric acid mouth washes is recommended. The treatment of intracranial hemorrhage consists of leaving the infant alone and the intraperitoneal injection of citrated blood. No mention is made of spinal drainage.

The reviewer does not agree with the author's interpretation of Colles' law in congenital syphilis. A primipara is not allowed to nurse her syphilitic infant. If the baby is apparently healthy and the mother syphilitic the baby is allowed to nurse for the first three months only.

There should be no necessity for the concealing of truth from parents, except in unusual circumstances and yet we are told that the practitioner has to conceal the actual facts about the real nature of congenital syphilis.

L. VON MEYSENBUG, M. D.

PUBLICATIONS RECEIVED.

The MacMillan Company, New York: "The Treatment of Acute Infectious Diseases," by Frank Sherman Meara, M. D., Ph.D.

P. Blakiston's Son & Company, Philadelphia: "A Text-Book of Histology," by Dr. Frederic T. Lewis and Dr. J. L. Bremer.

REPRINTS.

"Suggestions for County Medical Societies," by G. Henry Mundt, M. D., F. A. C. S. "Physical Therapy in Relation to the State Medical Society," by G. Henry Mundt, M. D.

Battle Creek, Mich., Sept. 16.—That the medical profession itself is in part responsible for the growth of quackery and of anti-medical cults in the United States was asserted by Dr. Donald B. Armstrong of the Metropolitan Life Insurance Company in speaking here today before the Michigan Conference of Social Work. Dr. Armstrong based his statements upon the thousands of letters received by insurance companies and other national agencies from people all over the country seeking health advice and medical guidance.

"From this experience," stated Dr. Armstrong, "it is clear that the public wants protection against quackery and fraud. Many who write for advice suspect that the advertised cures are fakes, but don't know where to turn for safe and sound medical advise and treatment."

Dr. Armstrong pointed out that the people throughout the country not only want to be protected against quackery, but they are willing to accept and actively desire direction to safe and helpful medical and health services and facilities. In seeking reliable services, however, many go wrong and get into blind alleys, through lack of guidance. They are so often fooled by quackery in the guise of medicine that they frequently lose faith in the medical profession as a whole.